PIONEER®
The Art of Entertainment

Service Manual

KEH-P9750/ES

ORDER NO.
CRT2197

MULTI-CD/MD/DAB CONTROL DSP HIGH POWER CASSETTE PLAYER WITH RDS TUNER

KEH-P9700R EW

MULTI-CD CONTROL DSP HIGH POWER CASSETTE PLAYER WITH FM/AM TUNER

KEH-P9750 ES

NOTE:

- See the separate manual CX-631(CRT1640) for the cassette mechanism description.
- The cassette mechanism assy employed in this model is one of 2L series
- Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation. "Dolby" and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.
- This service manual does not describe the CD test mode.
  For the operations in the CD test mode, refer to the CD player's Service Manual.

CONTENTS

PIONEER ELECTRONIC CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153-8654, Japan
PIONEER ELECTRONICS SERVICE INC. P.O.Box 1760, Long Beach, CA 90801-1760 U.S.A.
PIONEER ELECTRONIC [EUROPE] N.V. Haven 1087 Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS ASIACENTRE PTE.LTD. 501 Orchard Road, #10-00, Wheelock Place, Singapore 238880

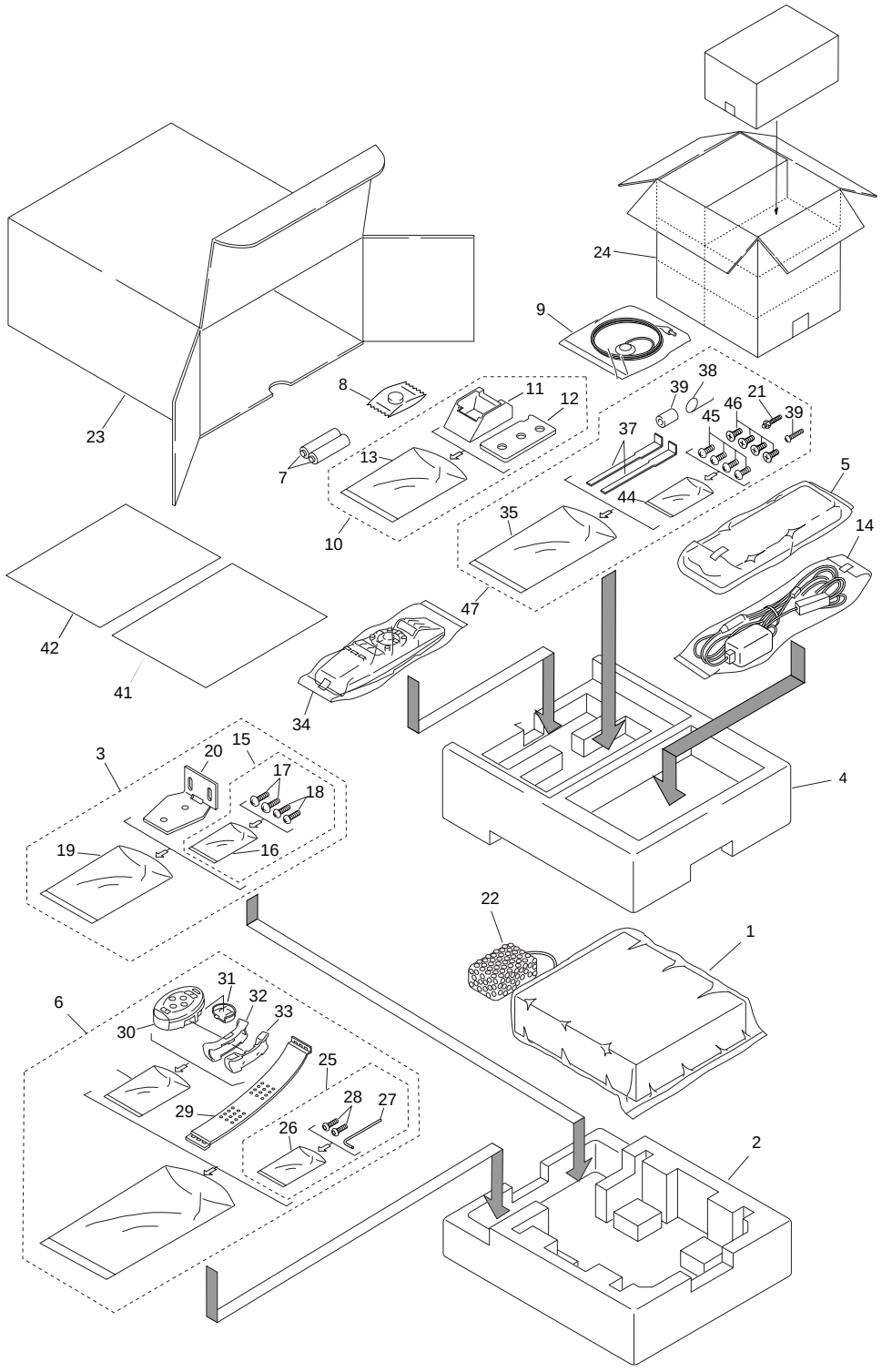
K-ZEU MAY 1998 Printed in Japan

1. SAFETY INFORMATION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer.
Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty.
If you are not qualified to perform the repair of this product properly and safely, you should mot risk trying to do so and refer the repair to a qualified service technician.

2. EXPLODED VIEWS AND PARTS LIST

2.1 PACKING



NOTE:

● Parts marked by "*" are generally unavailable because they are not in our Master Spare Parts List.

● Screws adjacent to ∇ mark on the product are used for disassembly.

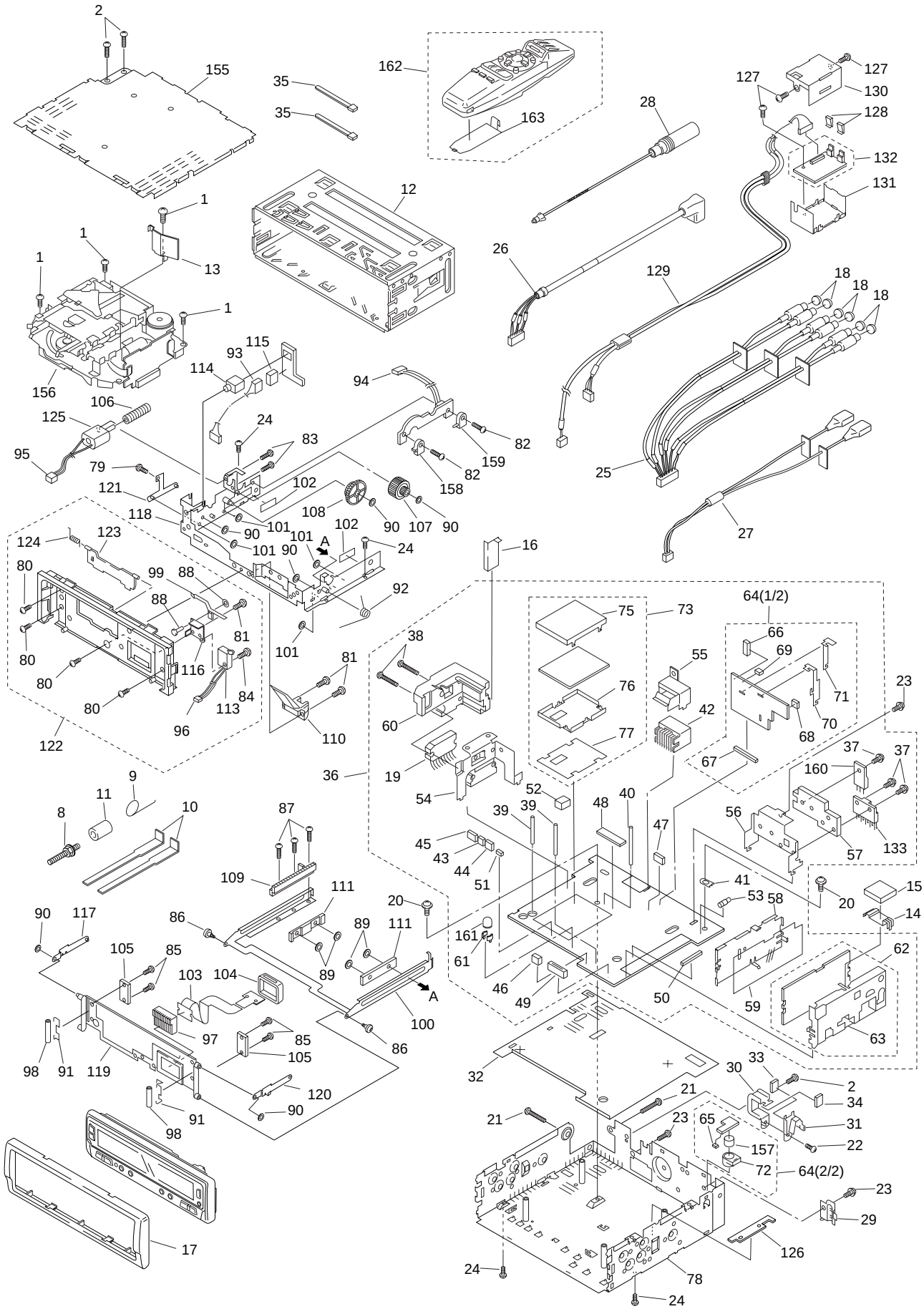
● Parts List

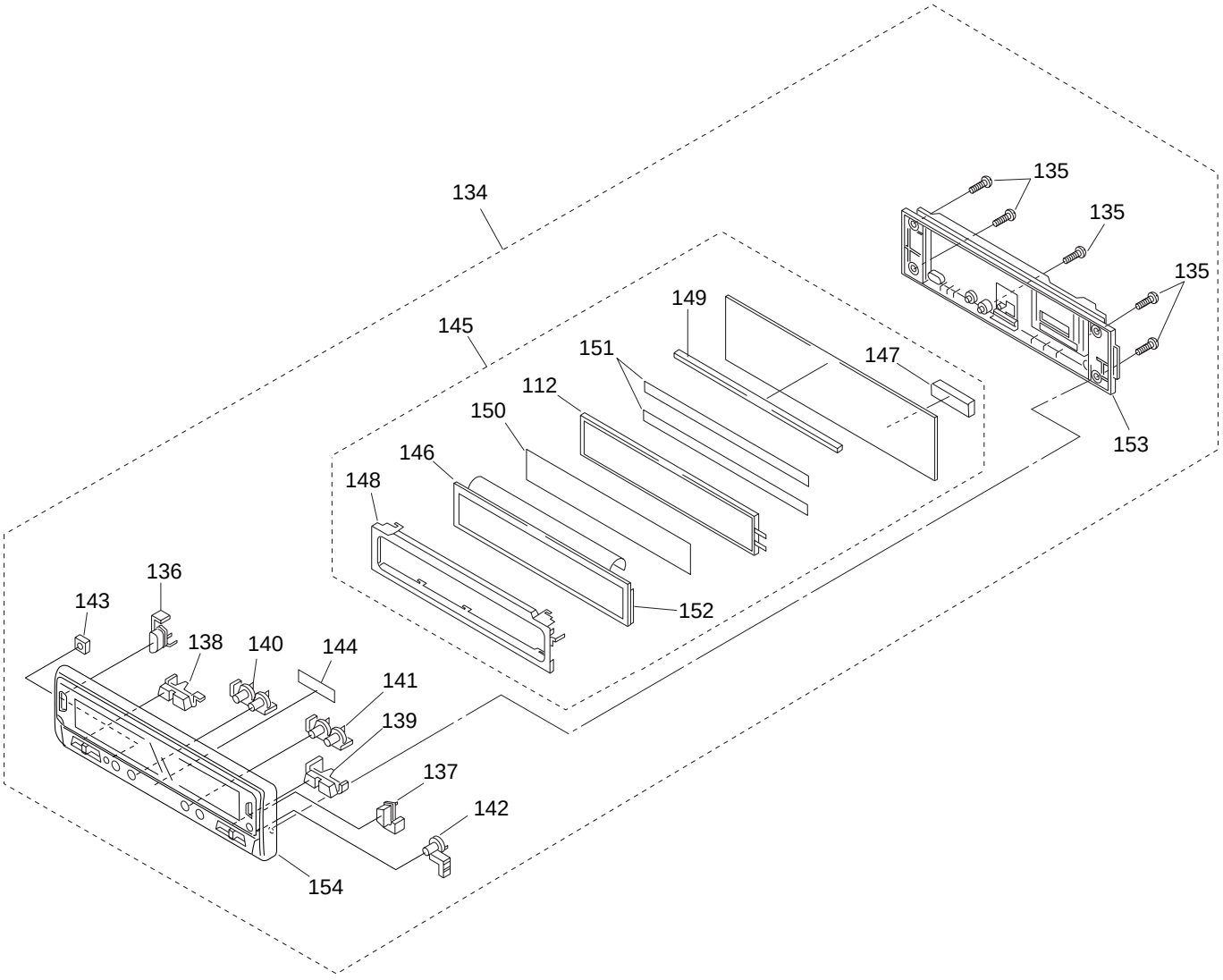
Mark	No.	Description	Part No.
*	1	Cover	CEG1088
	2	Protector(EW)	CHP2090
		Protector(ES)	CHP2033
	3	Bracket Assy	CEA2346
	4	Protector(EW)	CHP2089
		Protector(ES)	CHP2032
	5	Case Assy	CXA7194
	6	Remote Control Assy(EW)	CXB2636
	7	Battery	CEX1006
	8	Battery(EW)	CEX1030
	9	Microphone Assy	CPM1022
	10	Base Assy	CEA2426
*	11	Base	CNS5031
*	12	Seat	CZA3371
	13	Polyethylene Bag	CZE3188
	14	Cord Assy(EW)	CDE5668
		Cord Assy(ES)	CDE5669
	15	Screw Assy	CZE3198
*	16	Polyethylene Bag	CEG-127
	17	Screw	BNC40P120FZK
	18	Screw	BPZ30P100FZK
*	19	Polyethylene Bag	CZE3201
	20	Bracket	CZN6467
*	21	Accessory Assy(EW)	CEA2429
	22	Air Cap	CEG1080
	23	Carton(EW)	CHG3535
		Carton(ES)	CHG3505
	24	Contain Box(EW)	CHL3535
		Contain Box(ES)	CHL3505
	25	Screw Assy(EW)	CZE3169
*	26	Polyethylene Bag(EW)	CEG-127
	27	Hexagon Wrench(EW)	CZE3176
	28	Screw(EW)	RMZ30H060FBK
	29	Belt(EW)	CZN6416
	30	Remote Control Assy(EW)	CZX3218
	31	Cover(EW)	CZN6410
	32	Holder Assy(EW)	CZX3172
	33	Holder Assy(EW)	CZX3173
	34	Remote Control Assy(EW)	CXB2659
		Remote Control Assy(ES)	CXB2656
*	35	Polyethylene Bag	E36-615
*		Polyethylene Bag	CEG-158
	36	Bush	CNV1917
	37	Handle	CNC5395
	38	Spring	CBH-865
	39	Screw	CBA1120
	40	Screw	CBA1002
	41-1	Polyethylene Bag	CEG1116
	41-2	Owner's Manual(EW)	CRD2636
		Owner's Manual(ES)	CRD2642
	41-3	Owner's Manual(EW)	CRD2637
		Owner's Manual(ES)	CRD2643
	41-4	Owner's Manual(EW)	CRD2638
	41-5	Installation Manual(ES)	CRD2644
	41-6	Installation Manual(ES)	CRD2645
	42-1	Polyethylene Bag(EW)	CEG1116
	42-2	Installation Manual(EW)	CRD2639
	42-3	Installation Manual(EW)	CRD2640
	42-4	Installation Manual(EW)	CRD2641
	42-5	Passport(EW)	CRY1013
*	42-6	Warranty Card(EW)	CRY1087
*	42-7	Card(EW)	CRD1183
*	42-7	Card(ES)	CRD1186
*	42-8	Card(EW)	CRD1184
*	42-9	Card(EW)	CRD1185
*	43	Screw Assy(ES)	CEA2434
*	44	Polyethylene Bag(ES)	CEG-127
	45	Screw(ES)	BMZ50P060FMC
	46	Screw(ES)	CMZ50P060FMC
*	47	Accessory Assy(ES)	CEA2431

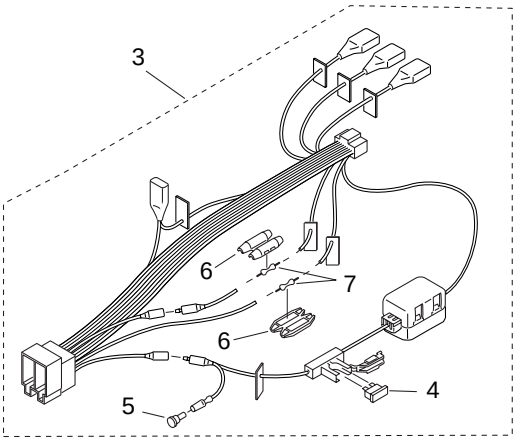
● Owner's Manual, Installation Manual

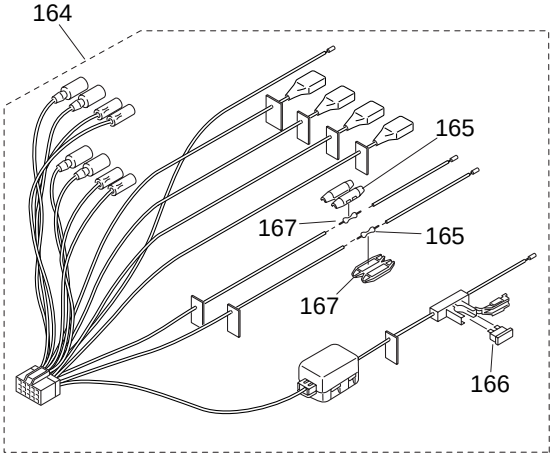
Model	Part No.	Language
KEH-P9700R/EW	CRD2636,CRD2639	English,Spanish
	CRD2637,CRD2640	German,French
	CRD2638,CRD2641	Italian,Dutch
KEH-P9750/ES	CRD2642,CRD2644	English,Spanish
	CRD2643,CRD2645	Portuguese(B),Arabic

2.2 EXTERIOR


2
155
35
35
162
163
28
127
127
130
128
132
131
12
1
1
1
13
1
1
26
129
18
18
18
25
27
156
106
125
95
79
121
118
114
93
115
24
83
94
82
159
82
158
102
108
90
107
90
101
90
101
90
101
A
102
24
16
92
101
81
110
124
123
80
99
88
88
81
80
80
80
80
116
113
84
96
122
38
60
19
36
54
75
73
64(1/2)
66
69
76
77
55
42
71
70
68
67
23
37
37
160
56
57
133
52
40
48
39
39
47
45
43
44
51
41
53
58
20
15
14
62
63
59
50
161
61
46
49
9
11
8
10
87
109
111
86
89
89
111
20
90
117
105
85
103
104
97
85
105
98
91
119
120
90
91
98
100
86
A
32
30
33
2
34
21
21
23
65
31
157
22
72
64(2/2)
23
29
126
24
78
24
17


134
135
135
135
149
145
151
147
112
150
146
148
153
152
136
143
138
140
144
141
139
137
142
154


3
6
7
6
5
4

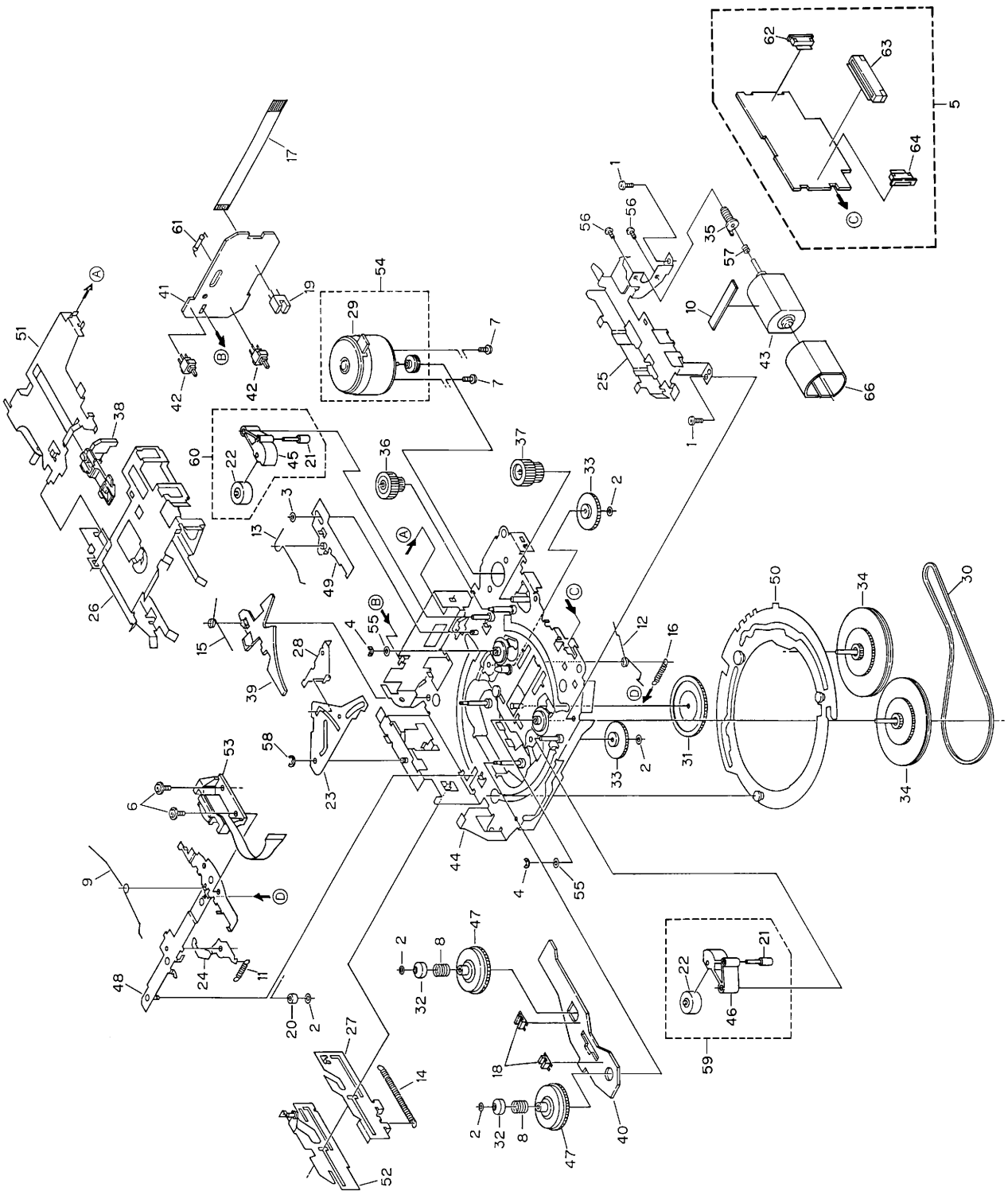

164
165
167
165
167
166

● Parts List

Mark	No.	Description	Part No.
	1	Screw	BSZ26P050FMC
	2	Screw	BSZ30P055FMC
	3	Cord Assy(EW)	CDE5668
	4	Fuse 10A(EW)	CEK1136
	5	Cap(EW)	CKX-003
	6	Cap(EW)	CNS1472
	7	Resistor(EW)	RS1/2PMF102J
	8	Screw	CBA1002
	9	Spring	CBH-865
	10	Handle	CNC5395
	11	Bush	CNV1917
	12	Holder	CNC6798
	13	Shield	CNC7609
	14	Earth Terminal(EW)	CNC8019
		Earth Terminal(ES)	CNC7358
	15	Spacer	CNM4913
	16	Spacer	CNM6052
	17	Panel(EW)	CNS4553
		Panel(ES)	CNS4320
	18	Cap	CNV2680
	19	IC(IC251)	TDA7386
	20	Screw	ASZ26P055FUC
	21	Screw	BMZ30P180FMC
	22	Screw	BSZ26P080FMC
	23	Screw	BSZ30P055FMC
	24	Screw	CBA1447
	25	Cord Assy	CDE5588
	26	Cord Assy	CDE5663
	27	Cord Assy	CDE5664
	28	Antenna Cord	CDH1251
	29	Holder	CNC4963
	30	Holder	CNC7566
	31	Holder	CNC7753
	32	Insulator	CNM5628
	33	Cushion	CNM5811
	34	Cushion	CNM5812
*	35	Lock Tie	CNV-754
	36	Tuner Amp Unit(EW)	CWM5781
		Tuner Amp Unit(ES)	CWM5782
	37	Screw	ASZ26P100FMC
	38	Screw	BMZ26P200FMC
	39	Clamper	CEF1006
	40	Clamper	CEF1009
	41	Terminal(CN402)	CKF1059
	42	Plug(CN251)	CKM1278
	43	Plug(CN951)	CKS-783
	44	Plug(CN952)	CKS-784
	45	Plug(CN171)	CKS-786
	46	Plug(CN803)	CKS1222
	47	Plug(CN804)	CKS1225
	48	Plug(CN201)	CKS1246
	49	Connector(CN801)	CKS1564
	50	Connector(CN751)	CKS1730
	51	Connector(CN953)	CKS3124
	52	Connector(CN101)	CKS3781
	53	Antenna Jack(CN401)	CKX1010
	54	Holder	CNC7554
	55	Holder	CNC8008
	56	Holder	CNC8016
	57	Heat Sink	CNC8020
	58	Holder	CNC8021
	59	Insulator	CNM4684
	60	Heat Sink	CNR1468
	61	Holder	CNV1906
	62	FM/AM Tuner Unit(EW)	CWE1416
		FM/AM Tuner Unit(ES)	CWE1485
	63	Holder	CNC6555
	64	ASL Unit	CWM5783
	65	Connector(CN302)	CDE5667
*	66	Plug(CN701)	CKS1058
	67	Plug(CN703)	CKS1624
	68	Connector(CN301)	CKS2191
	69	Connector(CN601)	CKS3582
	70	Holder	CNC6676
	71	Holder	CNC8017
	72	Holder	CNV5375
	73	DSP Unit(EW)	CWX2237
		DSP Unit(ES)	CWX2238
	74	Connector(CN3001)	CKS3782
	75	Case	CNC8014
	76	Case	CNC8015
	77	Insulator	CNM5626
	78	Chassis Unit(EW)	CXB2231
		Chassis Unit(ES)	CXB2296
	79	Screw	BMZ20P030FMC
	80	Screw	BMZ20P030FZK
	81	Screw	BPZ20P060FMC
	82	Screw	CBA1060
	83	Screw	CBA1061
	84	Screw	CBA1070
	85	Screw	CBA1082
	86	Screw	CBA1430
	87	Screw	CBA1454
	88	Washer	CBF-046
	89	Washer	CBF1038
	90	Washer	CBF1039
	91	Spring	CBH2063
	92	Spring	CBH2086
	93	Cord	CDE5587
	94	Cord	CDE5712

Mark	No.	Description	Part No.
	95	Cord	CDE5713
	96	Connector	CDE5738
	97	Socket	CKS2497
	98	Roller	CLA3458
	99	Arm	CNC1280
	100	Frame	CNC7548
	101	Spacer	CNM5808
	102	Spacer	CNM5988
	103	PCB	CNP5068
	104	Cover	CNS4841
	105	Holder	CNV2141
	106	Gear	CNV5271
	107	Gear Unit	CNV5272
	108	Gear	CNV5273
	109	Rack	CNV5274
	110	Lighting Conductor	CNV5287
	111	Guide	CNV5356
	112	EL(EL1901)	CEL1580
	113	Switch	CSN-088
	114	Jack(CN4602)	CKN1015
	115	Plug(CN4601)	CKS-786
	116	Holder Unit	CXA8599
	117	Arm Unit	CXB2215
	118	Frame Unit	CXB2216
	119	Holder Unit	CXB2217
	120	Arm Unit	CXB2218
	121	Bracket Unit	CXB2598
	122	Panel Unit	CXB2678
		Panel Unit	CXB2679
	123	Door	CAT1963
	124	Spring	CBH2184
	125	Motor(M951)	CXM1085
	126	Guide Unit	CXB3234
	127	Screw	BSZ26P050FMC
	128	Clip	MBK9001
	129	Cord	MDE9019
	130	Holder	MNC9008
	131	Holder	MNC9009
	132	Inverter Unit	MWM9026
	133	IC(IC901)	PA2024A
	134	Detach Grille Assy(EW)	CXB2610
		Detach Grille Assy(ES)	CXB2611
	135	Screw	BPZ20P080FZK
	136	Button(+,-)	CAC5486
	137	Button(EJECT)	CAC5488
	138	Button(EW)(S/A,CLOCK)	CAC5491
		Button(ES)(S/A,CLOCK)	CAC5490
	139	Button(TRACK)	CAC5494
	140	Button(P,D)	CAC5498
	141	Button	CAC5499
	142	Button(S)	CAC5504
	143	Spacer	CNM5910
	144	Spacer	CNM6021
	145	Keyboard Unit(EW)	CWM5688
		Keyboard Unit(ES)	CWM5689
*	146	LCD(LCD1901)	CAW1471
	147	Plug(CN1901)	CKS2496
	148	Holder	CNC7547
	149	Spacer	CNM5622
	150	Spacer	CNM5623
	151	Spacer	CNM5894
*	152	PCB	CNP5063
	153	Cover Unit(EW)	CXB2208
		Cover Unit(ES)	CXB2207
	154	Grille Unit(EW)	CXB2223
		Grille Unit(ES)	CXB2224
	155	Case Unit	CXB3114
	156	Cassette Mechanism Module	EXK3375
	157	Microphone(MIC301)	CPM1011
	158	Switch(S951)	CSN1012
	159	Switch(S952)	CSN1022
	160	IC(IC902)	NJM7805FA
	161	Lamp(IL801)	CEL1359
	162	Remote Control Assy(EW)	CXB2659
		Remote Control Assy(ES)	CXB2656
	163	Battery Cover	CNS5032
	164	Cord Assy(ES)	CDE5669
	165	Cap(ES)	CNS1472
	166	Fuse 10A(ES)	CEK1136
	167	Resistor(ES)	RS1/2PMF102J

2.3 CASSETTE MECHANISM MODULE



● CASSETTE MECHANISM MODULE

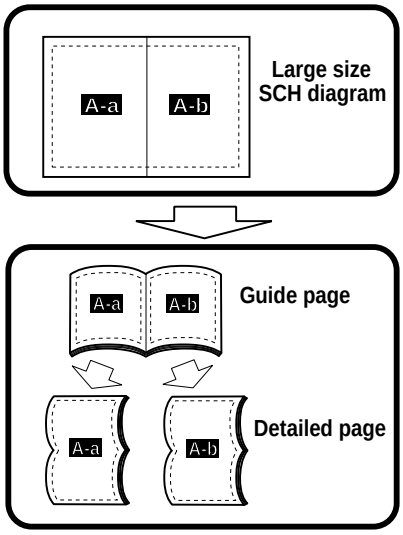
● PARTS LIST

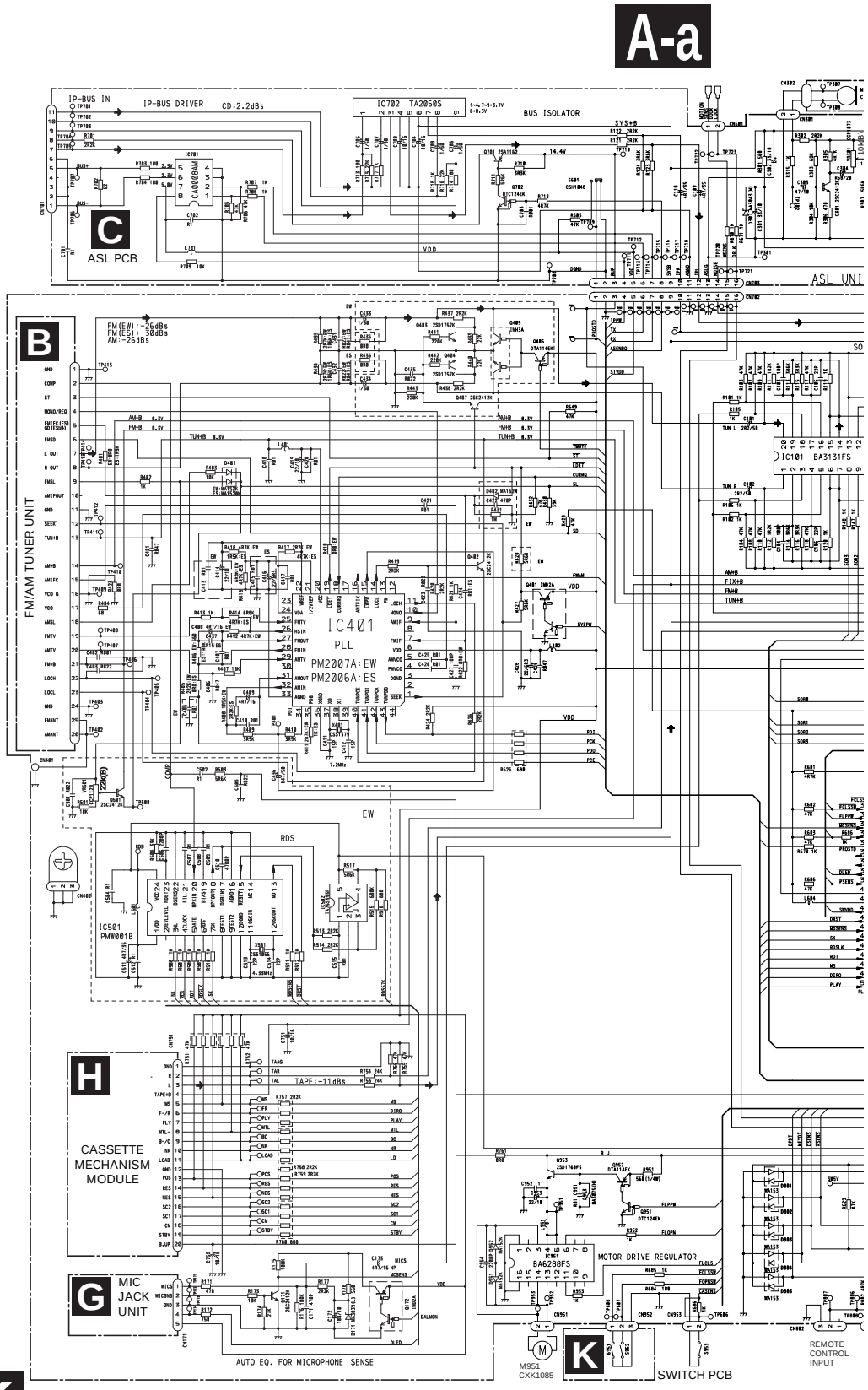
Mark No.	Description	Part No.
1	Screw	BSZ20P040FMC
2	Washer	CBF1037
3	Washer	CBF1038
4	Washer	CBG1003
5	Deck Unit	EWM1020
6	Screw	EBA1028
7	Screw	EBA1037
8	Spring	EBH1531
9	Spring	EBH1575
10	Cushion	EWM1034
11	Spring	EBH1515
12	Spring	EBH1587
13	Spring	EBH1517
14	Spring	EBH1518
15	Spring	EBH1519
16	Spring	EBH1537
17	Cord	EDD1015
18	Photo-interrupter(EGN2,3)	EGN1006
19	Photo-interrupter(EGN1)	EGN1005
20	Roller	ENR1031
21	Shaft	ELA1373
22	Pinch Roller	ENV1518
23	Arm	ENC1489
24	Arm	ENC1397
25	Guide	ENC1398
26	Holder	ENC1417
27	Lever	ENC1448
28	Arm	ENC1488
29	Motor	EXM1027
30	Belt	ENT1027
31	Gear	ENV1347
32	Pulley	ENV1503
33	Gear	ENV1350
34	Flywheel	ENV1410
35	Worm Gear	ENV1439
36	Worm Wheel	ENV1440
37	Gear	ENR1028
38	Lever	ENV1442
39	Arm	ENV1525
40	Gathering P.C.Board	ENX1037
41	P.C.Board	ENP1152
42	Switch(S1,S2)	ESG1004
43	Motor Unit(M2)	EXA1485
44	Chassis Unit	EXA1511
45	Pinch Holder	ENV1485
46	Pinch Holder	ENV1486
47	Reel Unit	EXA1543
48	Head Base Unit	EXA1457
49	Lever Unit	EXA1438
50	Gear Unit	EXA1436
51	Frame Unit	EXA1458
52	Lever Unit	EXA1439
53	Head Assy(HD1)	EXA1527
54	Motor Unit(M1)	EXA1490
55	Washer	HBF-179
56	Screw	BMZ20P022FMC
57	Spring	EBH1545
58	Washer	YE20FUC
59	Pinch Holder Unit	EXA1529
60	Pinch Holder Unit	EXA1528
61	Resistor(R1)	RD1/4PM181J
62	Connector(CN253)	CKS2129
63	Connector(CN251)	CKS1711
64	Connector(CN252)	CKS2127
65	•••••	
66	Shield	ENC1410

3. SCHEMATIC DIAGRAM

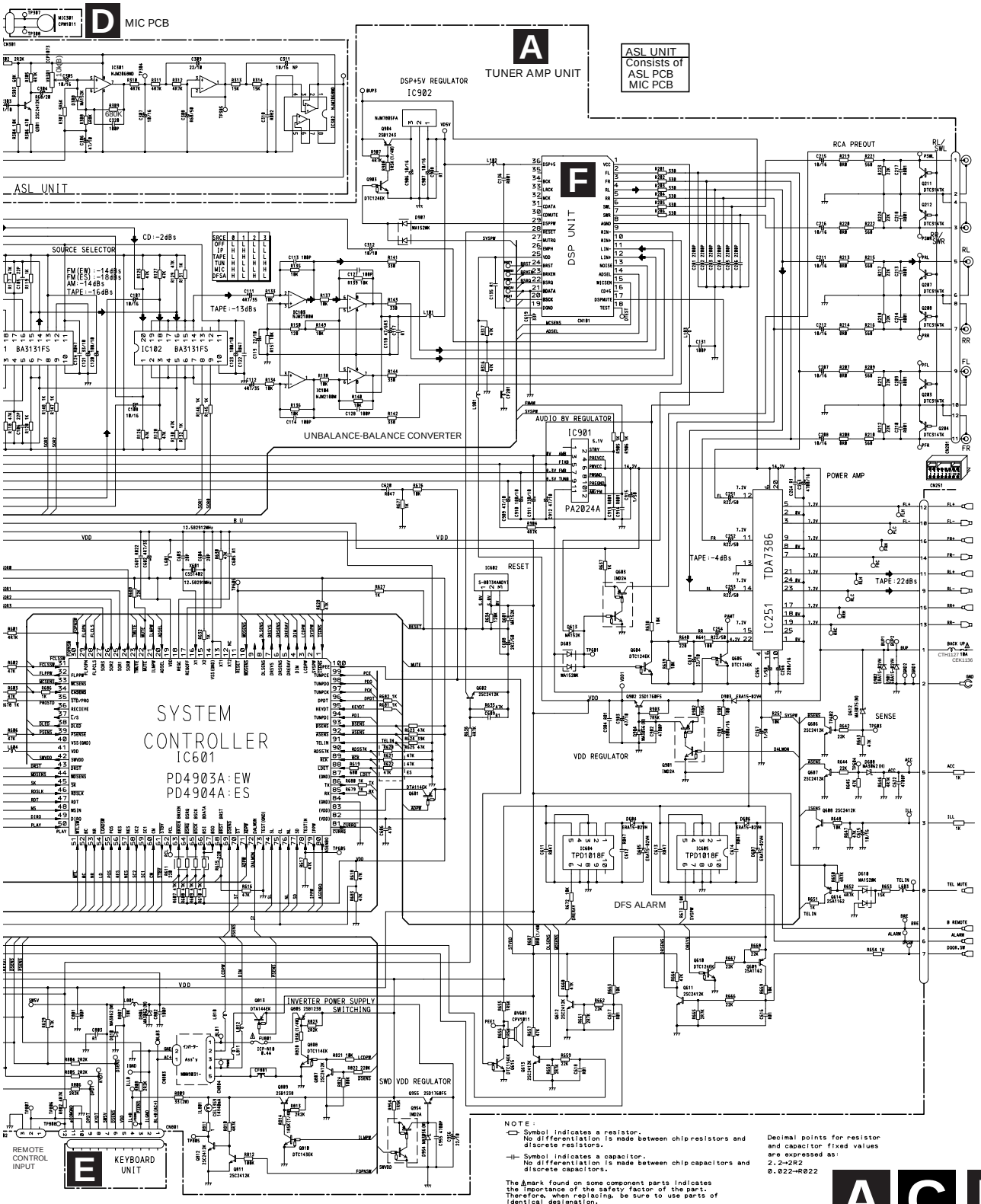
3.1 OVERALL CONNECTION DIAGRAM(GUIDE PAGE)

Note: When ordering service parts, be sure to refer to "EXPLODED VIEWS AND PARTS LIST" or "ELECTRICAL PARTS LIST".

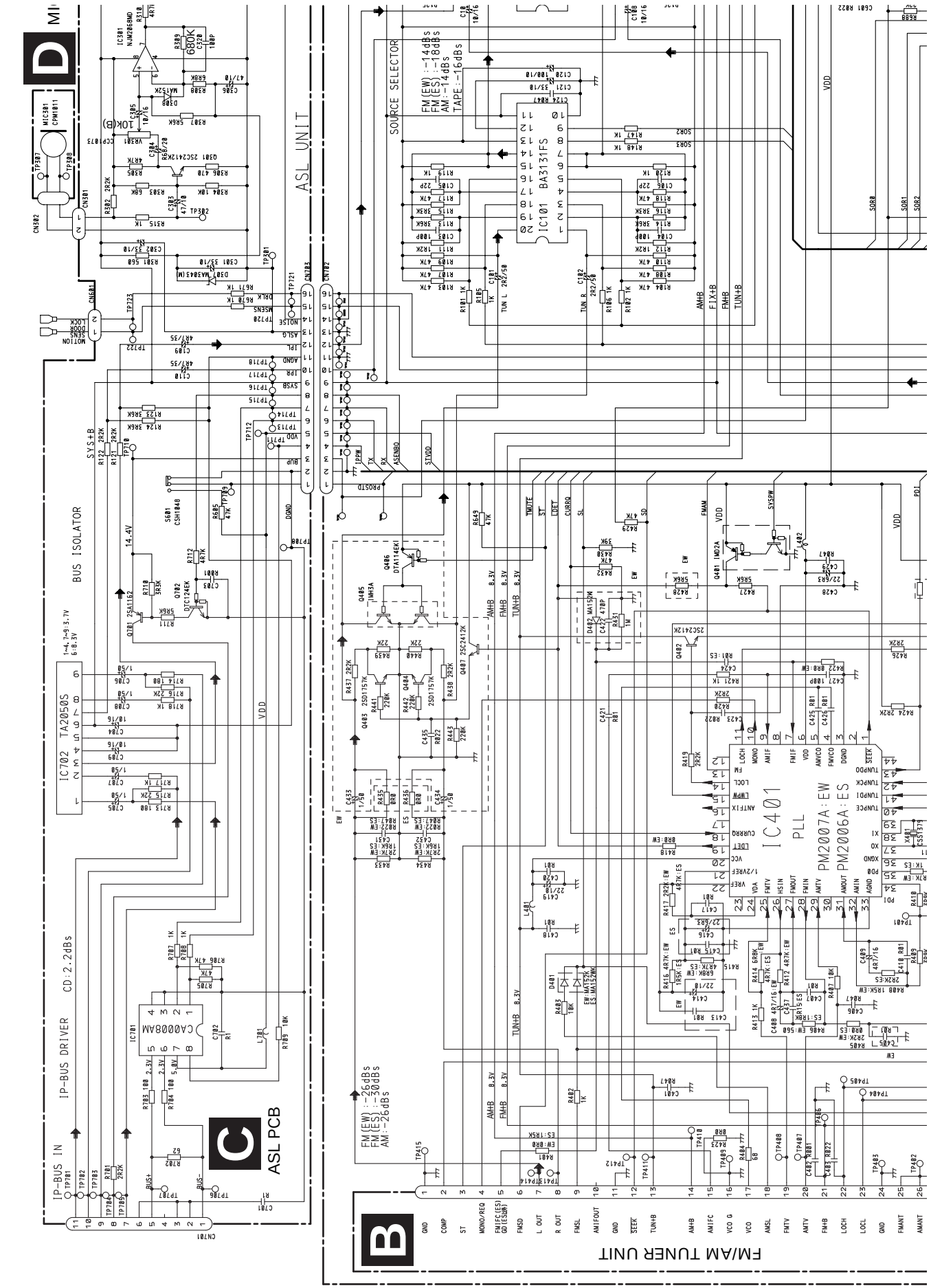




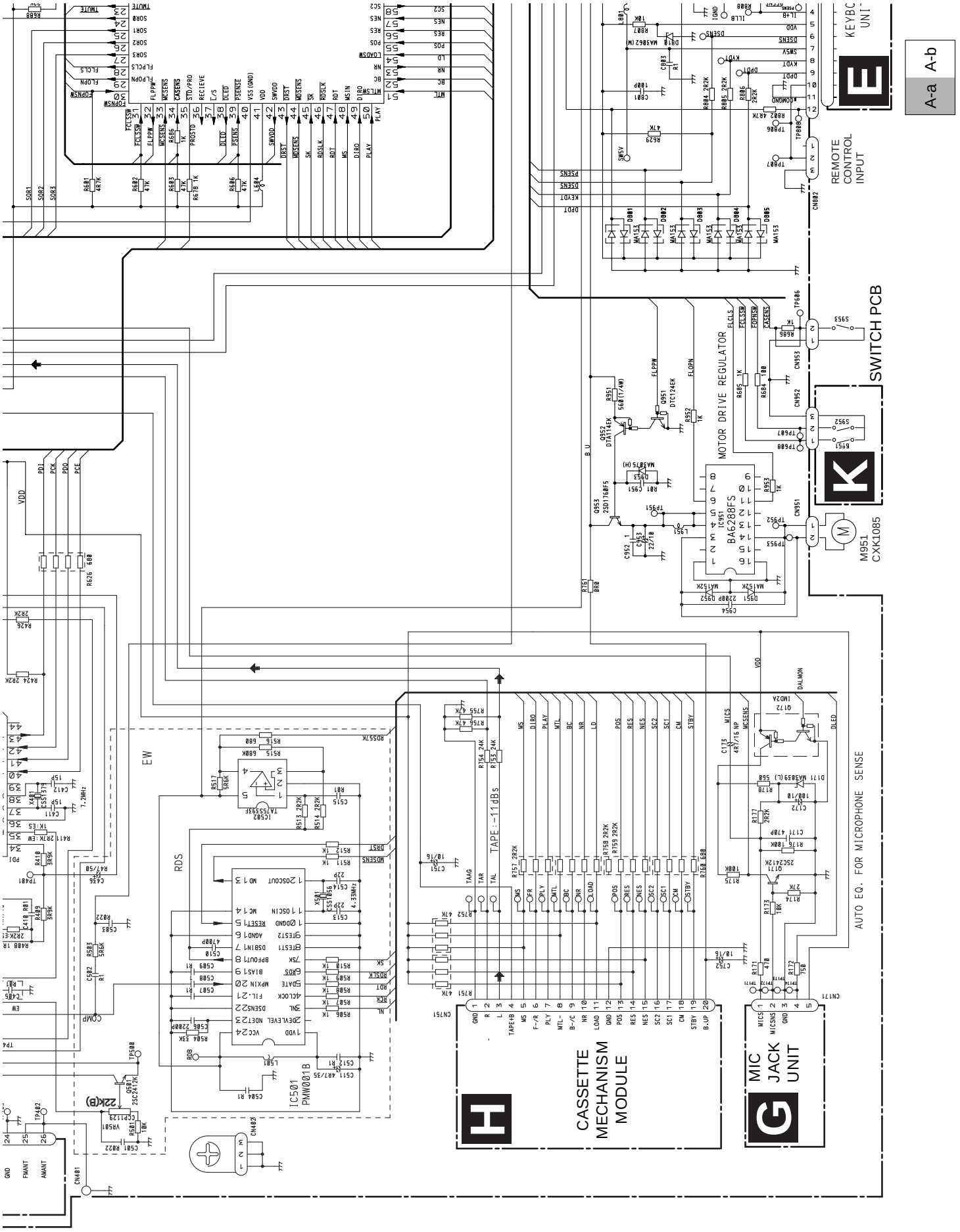
A-b

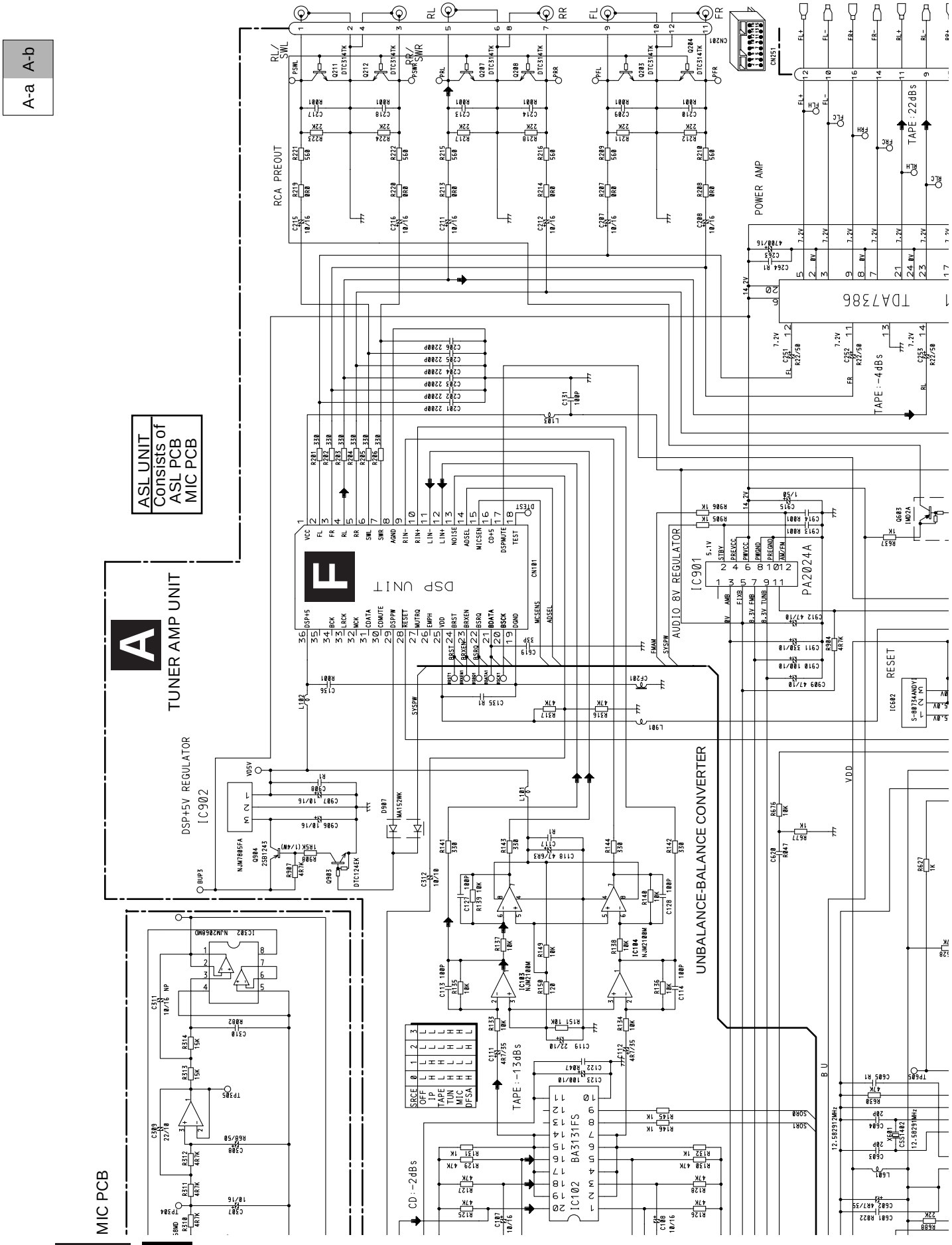

D
MIC PCB
A
TUNER AMP UNIT
ASL UNIT
Consists of
ASL PCB
MIC PCB
ASL UNIT
DSP+5V REGULATOR
IC902
F
DSP UNIT
RCA PREOUT
SOURCE SELECTOR
CD:-2dBs
FM(EW):-14dBs
FM(ES):-18dBs
AM:-14dBs
TAPE:-16dBs
TAPE:-13dBs
IC102
BA3131FS
UNBALANCE-BALANCE CONVERTER
AUDIO 8V REGULATOR
IC901
PA2024A
POWER AMP
IC251
TDA7386
TAPE:-4dBs
TAPE:22dBs
RESET
SYSTEM
CONTROLLER
IC601
PD4903A:EW
PD4904A:ES
VDD REGULATOR
SENSE
DFS ALARM
INVERTER POWER SUPPLY SWITCHING
SWD VDD REGULATOR
REMOTE CONTROL INPUT
E
KEYBOARD UNIT
NOTE:
Symbol indicates a resistor.
No differentiation is made between chip resistors and discrete resistors.
Symbol indicates a capacitor.
No differentiation is made between chip capacitors and discrete capacitors.
The Δmark found on some component parts indicates the importance of the safety factor of the part.
Therefore, when replacing, be sure to use parts of identical designation.
Decimal points for resistor and capacitor fixed values are expressed as:
2.2→2R2
0.022→R022

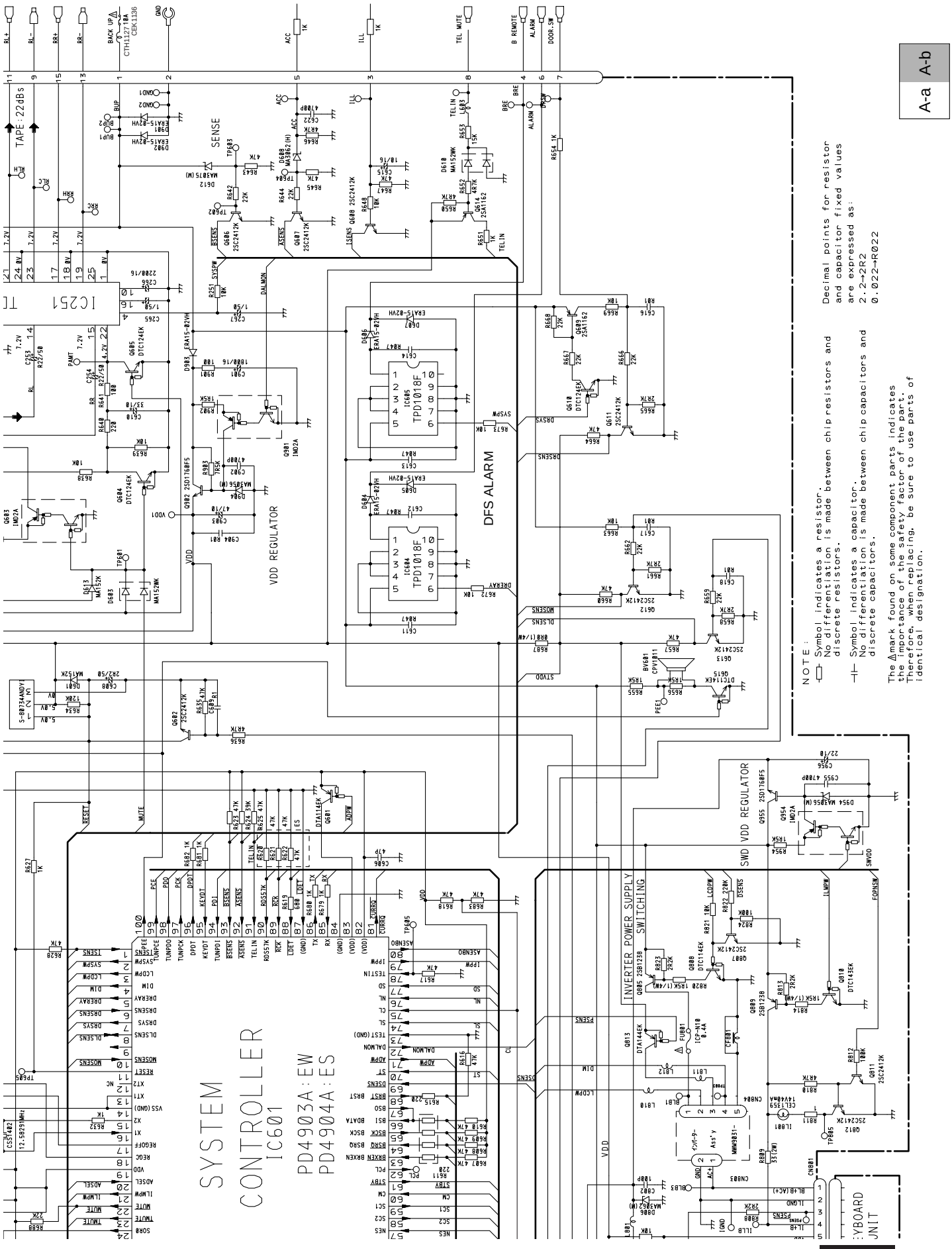
A C D


A-a A-b
D
ASL UNIT
BUS ISOLATOR
IP-BUS DRIVER
CD:2.2dBs
IP-BUS IN
C
ASL PCB
SOURCE SELECTOR
FM(EW) :-14dBs
FM(ES) :-18dBs
AM :-14dBs
TAPE :-16dBs
IC101 BA3131FS
IC702 TA2050S
IC401 PLL
PM2007A:EW
PM2006A:ES
FM(EW) :-26dBs
FM(ES) :-30dBs
AM :-26dBs
B
FM/AM TUNER UNIT

A-a C D

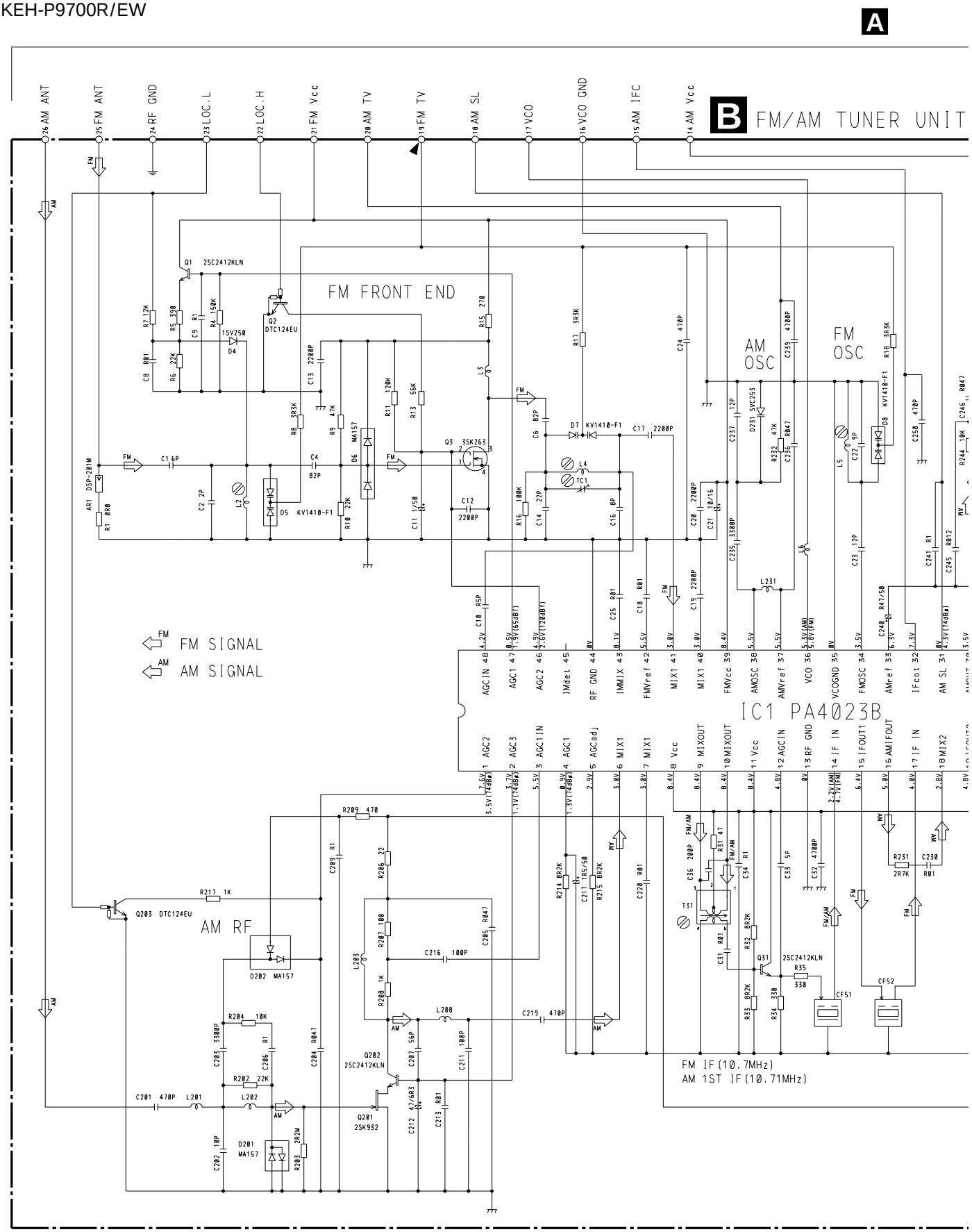

A-b
A-a
KEYBC UNIT
REMOTE CONTROL INPUT
SWITCH PCB
MOTOR DRIVE REGULATOR
BA6288FS
M951 CXK1085
AUTO EQ. FOR MICROPHONE SENSE
CASSETTE MECHANISM MODULE
MIC JACK UNIT
RDS
EW
TAPE:-11dBS
IC501 PMW001B
A-a K

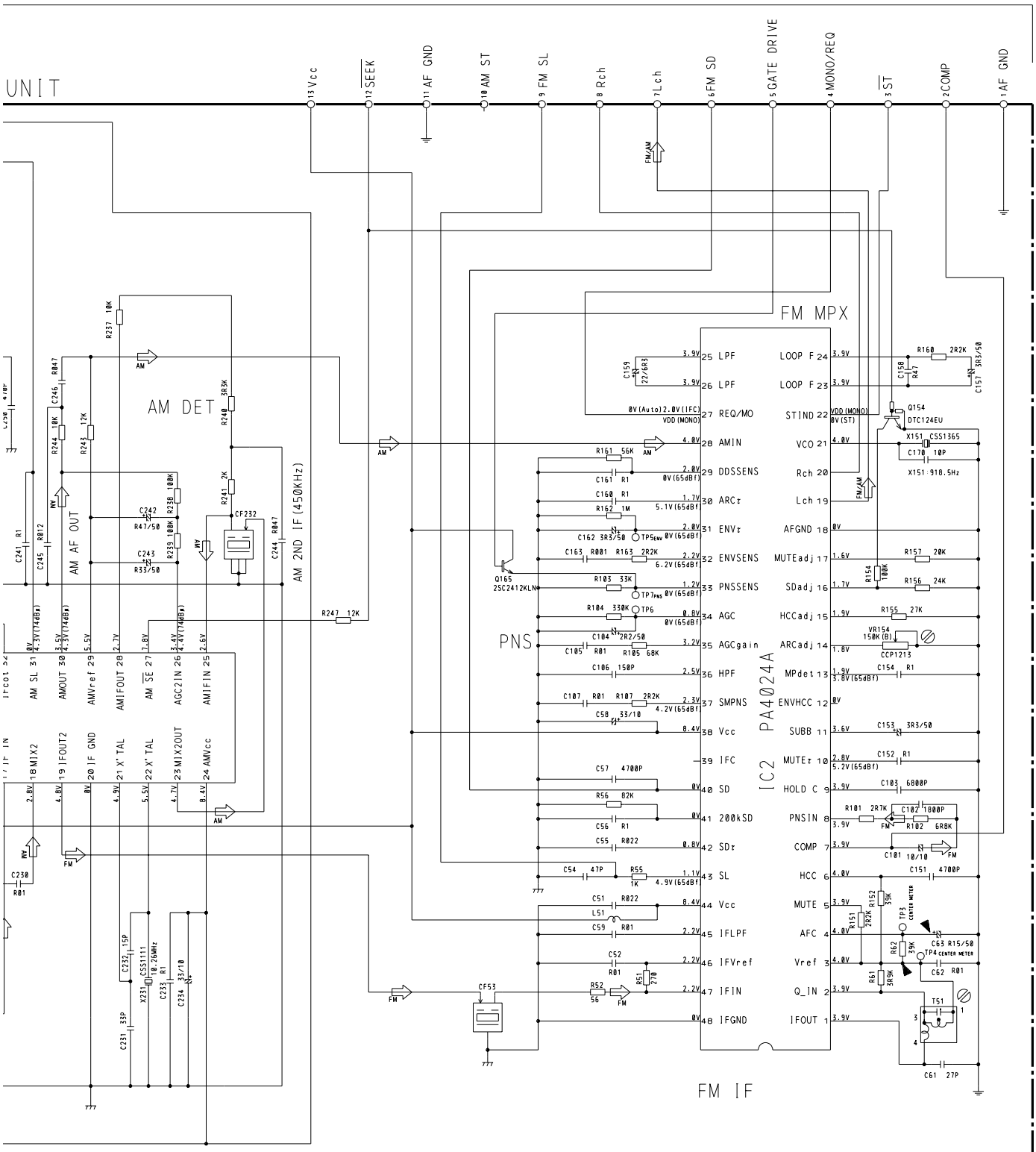

A-a A-b
ASL UNIT
Consists of
ASL PCB
MIC PCB
A
TUNER AMP UNIT
F
DSP UNIT
DSP+5V REGULATOR
IC902
AUDIO 8V REGULATOR
IC901
PA2024A
POWER AMP
TDA7386
RCA PREOUT
TAPE:-22dBs
TAPE:-4dBs
TAPE:-13dBs
CD:-2dBs
RESET
IC682
S-80734ANDY
UNBALANCE-BALANCE CONVERTER
IC102 BA3131FS
IC104 NJM2100M
IC103 NJM2100M
IC502 NJM2068MD
DSP PCB
MIC PCB
A-b
C


SYSTEM CONTROLLER IC601
PD4903A:EW
PD4904A:ES
SYSTEM CONTROLLER
SWD VDD REGULATOR
INVERTER POWER SUPPLY SWITCHING
DFS ALARM
VDD REGULATOR
TAPE:22dBs
SENSE
ACC
ILL
TEL MUTE
B REMOTE
ALARM
DOOR.SW
BACK UP
GND
RL+
RL-
RR+
RR-
NOTE:
Symbol indicates a resistor.
No differentiation is made between chip resistors and discrete resistors.
Symbol indicates a capacitor.
No differentiation is made between chip capacitors and discrete capacitors.
The Δmark found on some component parts indicates the importance of the safety factor of the part.
Therefore, when replacing, be sure to use parts of identical designation.
Decimal points for resistor and capacitor fixed values are expressed as:
2.2→2R2
0.022→R022
A-a A-b
A-b

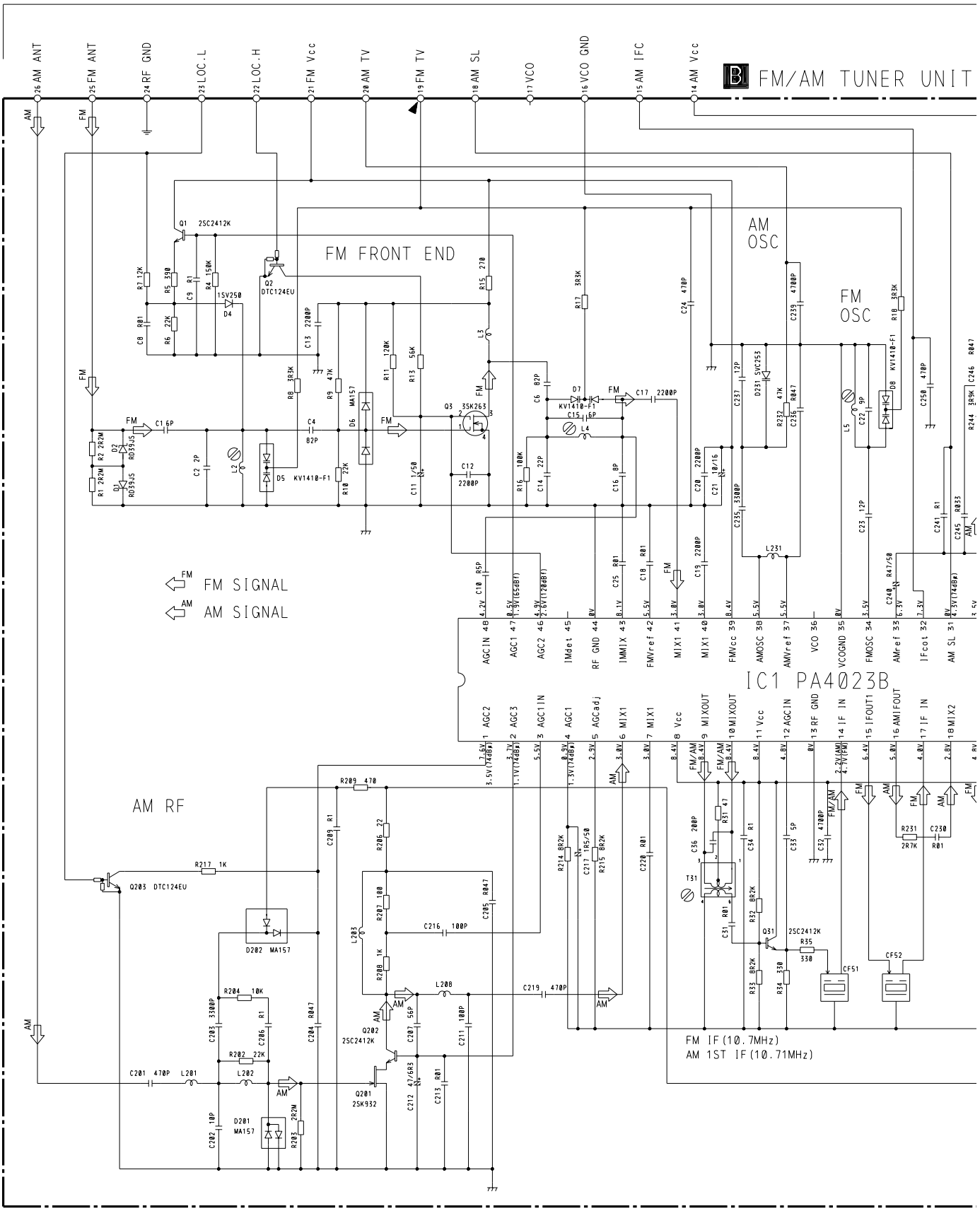
3.2 FM/AM TUNER UNIT

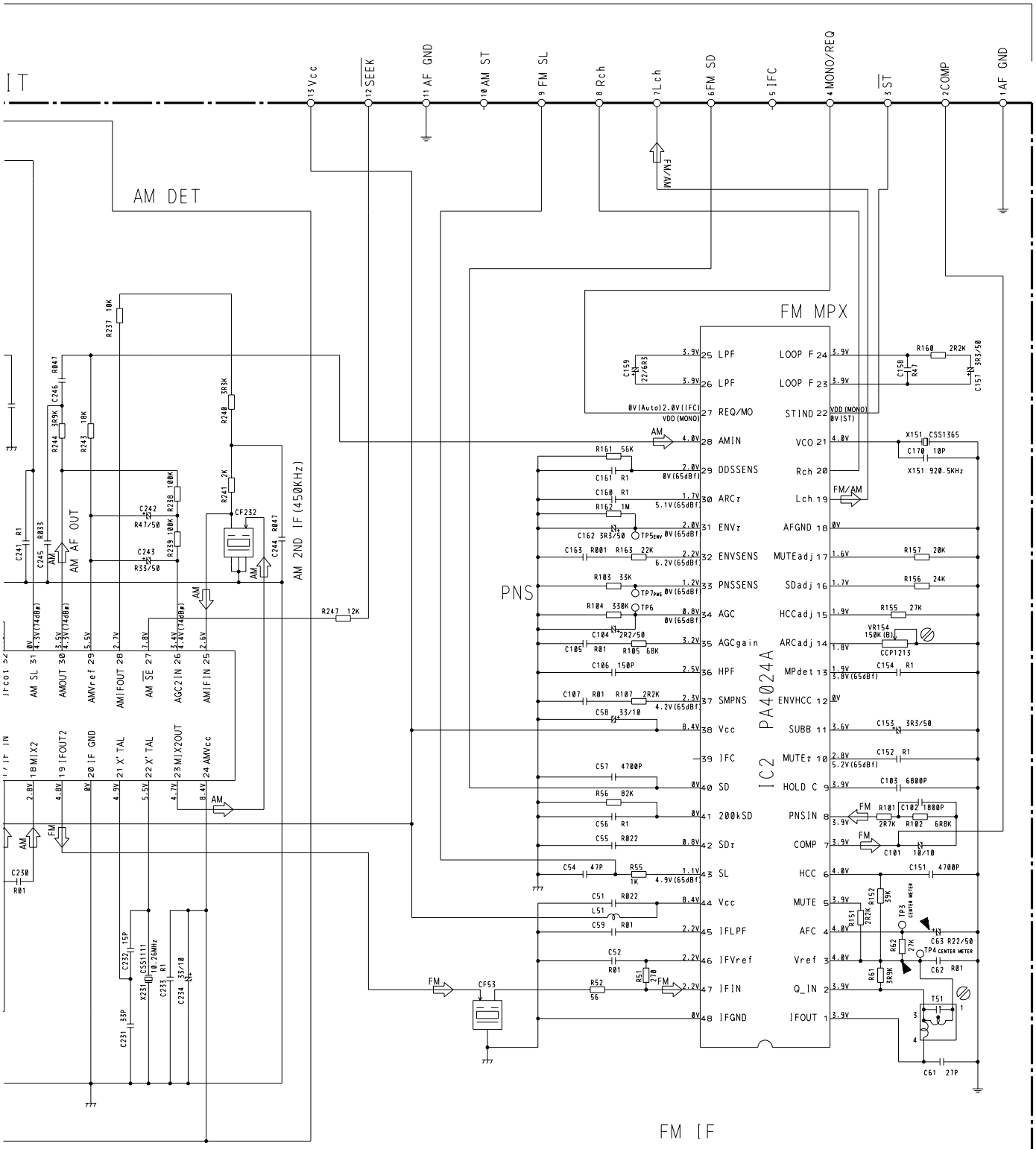
● KEH-P9700R/EW



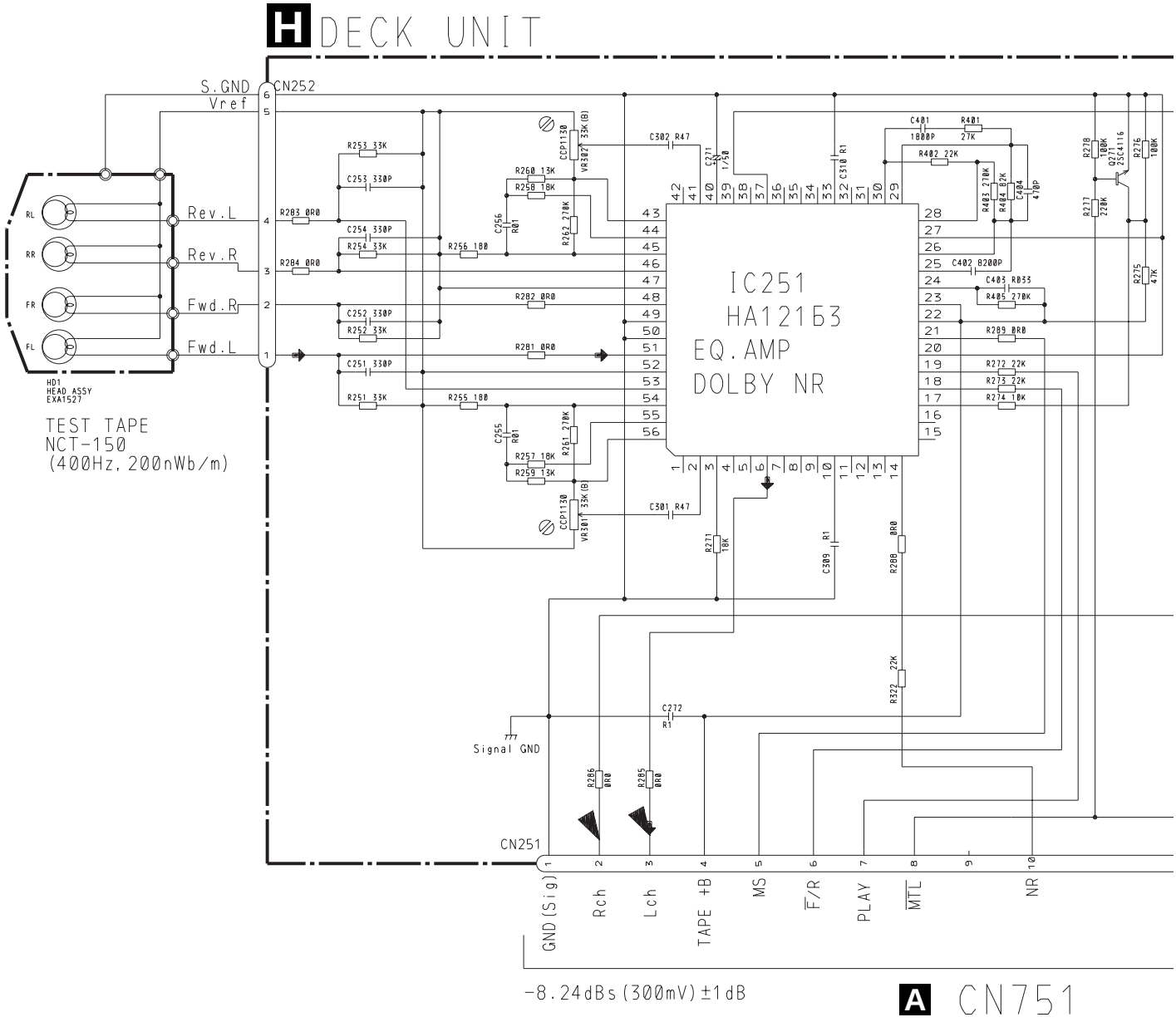

UNIT
13 Vcc
12 SEEK
11 AF GND
10 AM ST
9 FM SL
8 Rch
7 Lch
6 FM SD
5 GATE DRIVE
4 MONO/REQ
3 ST
2 COMP
1 AF GND
FM MPX
AM DET
AM AF OUT
AM 2ND IF (450KHz)
PNS
IC2 PA4024A
FM IF
25 LPF
26 LPF
27 REQ/MO
28 AMIN
29 DDSSENS
30 ARCr
31 ENVr
32 ENVSENS
33 PNSSENS
34 AGC
35 AGCgain
36 HPF
37 SMPNS
38 Vcc
39 IFC
40 SD
41 200kSD
42 SDr
43 SL
44 Vcc
45 IFLPF
46 IFVref
47 IFIN
48 IFGND
24 AMVcc
23 MIX2OUT
22 X'TAL
21 X'TAL
20 IF GND
19 IFOUT2
18 MIX2
AM SL 31
AMOUT 30
AMVref 29
AMIFOUT 28
AM SE 27
AGC2IN 26
AMIFIN 25
LOOP F 24
LOOP F 23
STIND 22
VCO 21
Rch 20
Lch 19
AFGND 18
MUTEadj 17
SDadj 16
HCCadj 15
ARCadj 14
MPdet 13
ENVHCC 12
SUBB 11
MUTEr 10
HOLD C 9
PNSIN 8
COMP 7
HCC 6
MUTE 5
AFC 4
Vref 3
Q_IN 2
IFOUT 1
X151: 918.5Hz
CF232
CF53
TP3 CENTER METER
TP4 CENTER METER
TP5ENV
TP7PNS
TP6
Q154 DTC124EU
Q165 2SC2412KLN
VR154 150K(B) CCP1213

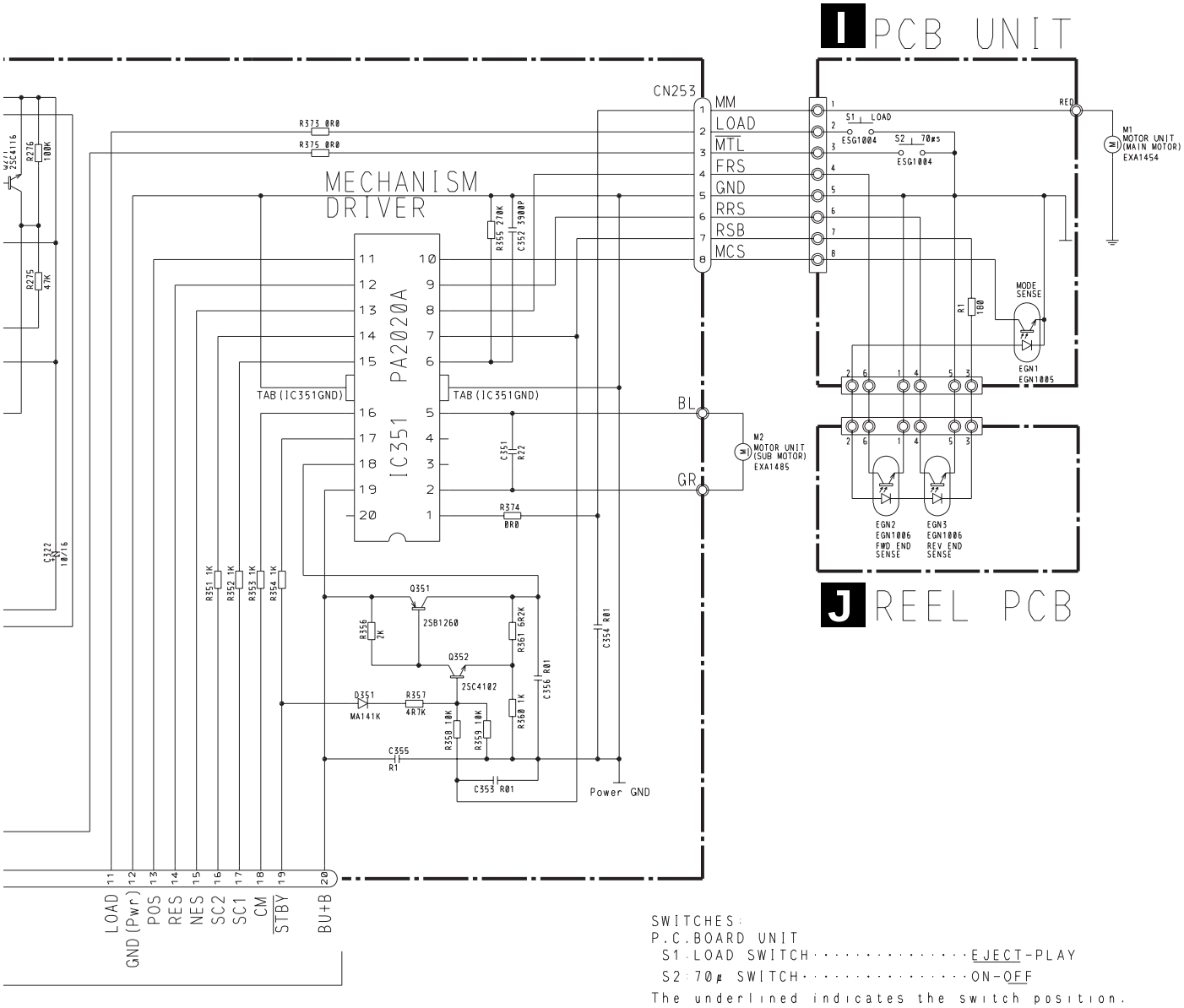
● KEH-P9750/ES


B FM/AM TUNER UNIT
26 AM ANT
25 FM ANT
24 RF GND
23 LOC.L
22 LOC.H
21 FM Vcc
20 AM TV
19 FM TV
18 AM SL
17 VCO
16 VCO GND
15 AM IFC
14 AM Vcc
FM FRONT END
AM OSC
FM OSC
FM SIGNAL
AM SIGNAL
IC1 PA4023B
AGCIN 48
AGC1 47
AGC2 46
IMdet 45
RF GND 44
IMMIX 43
FMVref 42
MIX1 41
MIX1 40
FMVcc 39
AMOSC 38
AMVref 37
VCO 36
VCOGND 35
FMOSC 34
AMref 33
IFcot 32
AM SL 31
AGC2 1
AGC3 2
AGC1IN 3
AGC1 4
AGCadj 5
MIX1 6
MIX1 7
Vcc 8
MIXOUT 9
MIXOUT 10
Vcc 11
AGCIN 12
RF GND 13
IF IN 14
IFOUT1 15
AMIFOUT 16
IF IN 17
MIX2 18
AM RF
FM IF(10.7MHz)
AM 1ST IF(10.71MHz)


AM DET
FM MPX
PNS
IC2 PA4024A
FM IF
AM AF OUT
AM 2ND IF (450KHz)
13 Vcc
12 SEEK
11 AF GND
10 AM ST
9 FM SL
8 Rch
7 Lch
6 FM SD
5 IFC
4 MONO/REQ
3 ST
2 COMP
1 AF GND
25 LPF
26 LPF
27 REQ/MO
28 AMIN
29 DDSSENS
30 ARCtr
31 ENVtr
32 ENVSENS
33 PNSSENS
34 AGC
35 AGCgain
36 HPF
37 SMPNS
38 Vcc
39 IFC
40 SD
41 200kSD
42 SDtr
43 SL
44 Vcc
45 IFLPF
46 IFVref
47 IFIN
48 IFGND
24 LOOP F
23 LOOP F
22 STIND
21 VCO
20 Rch
19 Lch
18 AFGND
17 MUTEadj
16 SDadj
15 HCCadj
14 ARCadj
13 MPdet
12 ENVHCC
11 SUBB
10 MUTEtr
9 HOLD C
8 PNSIN
7 COMP
6 HCC
5 MUTE
4 AFC
3 Vref
2 Q_IN
1 IFOUT
31 AM SL
30 AMOUT
29 AMVref
28 AMIFOUT
27 AM SE
26 AGC2IN
25 AMIFIN
18 MIX2
19 IFOUT2
20 IF GND
21 X'TAL
22 X'TAL
23 MIX2OUT
24 AMVcc
FM/AM
X151 CSS1365
X151:920.5KHz
CF232
CF53
TP3 CENTER METER
TP4 CENTER METER
VR154 150K(B)
CCP1213
T51

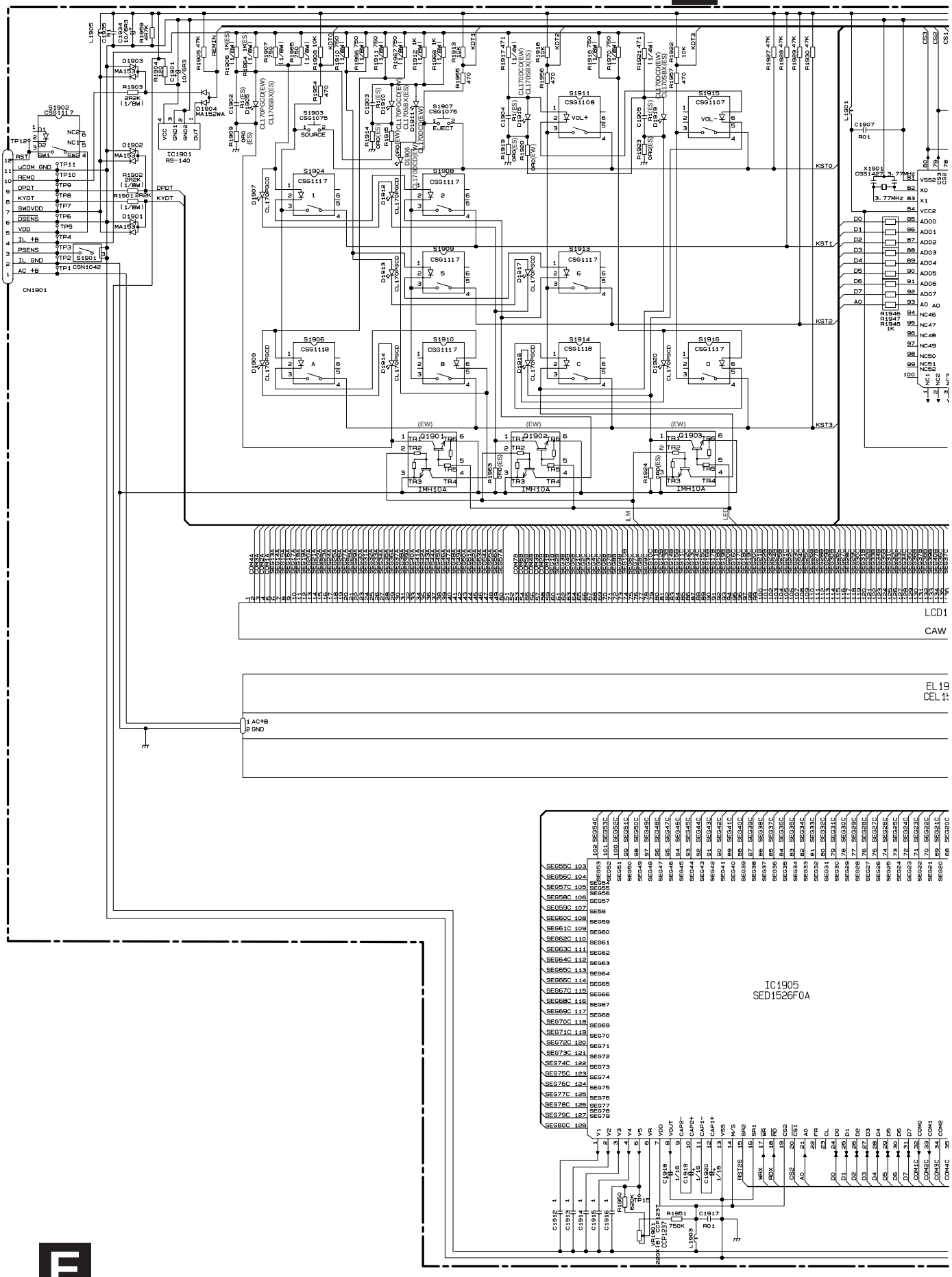
3.3 CASSETTE MECHANISM MODULE

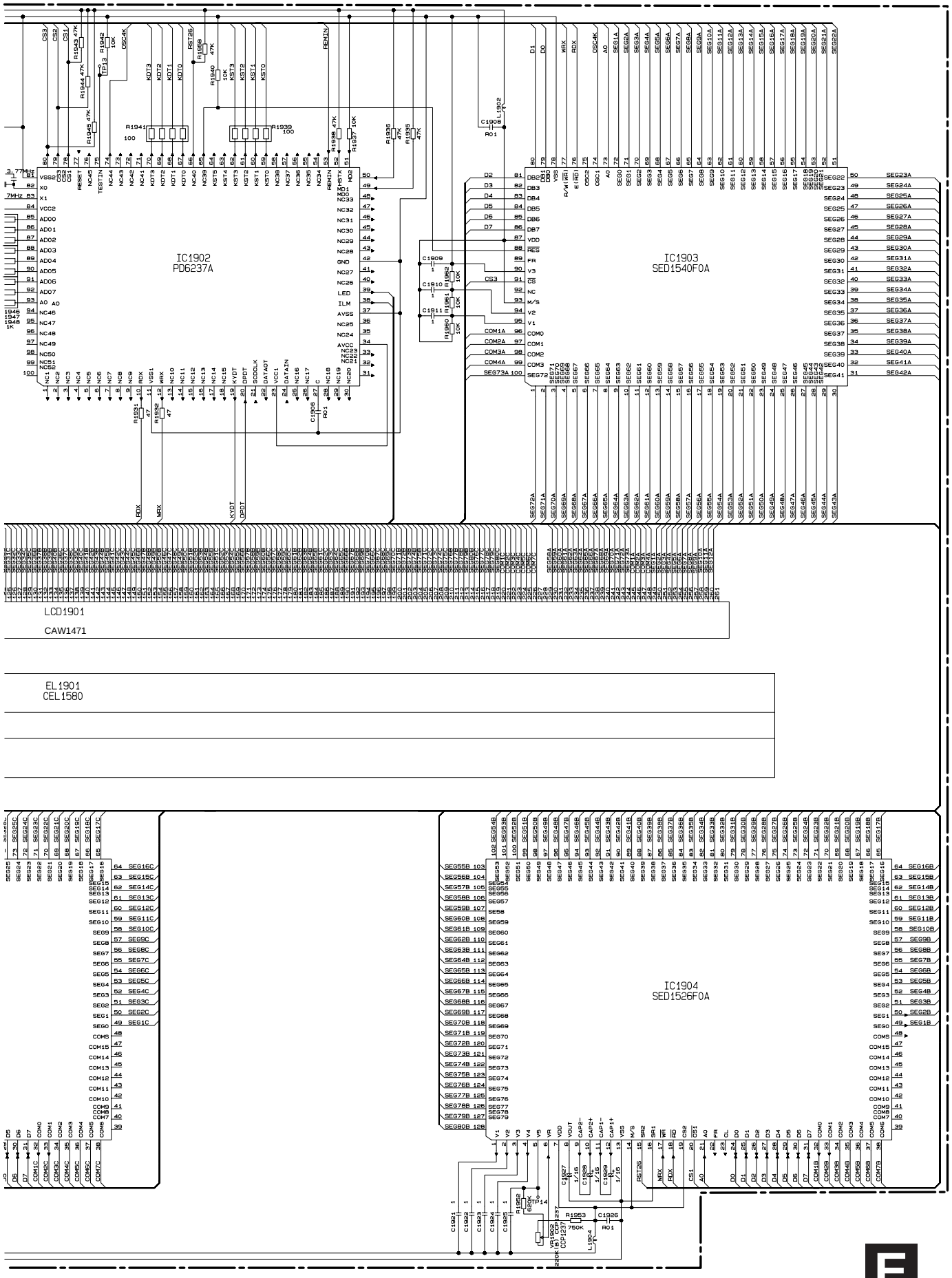




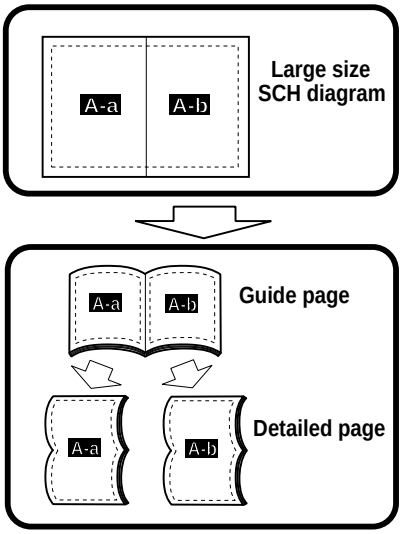
SWITCHES:
P.C.BOARD UNIT
S1 LOAD SWITCH ..... EJECT-PLAY
S2 70μ SWITCH ..... ON-OFF
The underlined indicates the switch position.

3.4 KEYBOARD UNIT

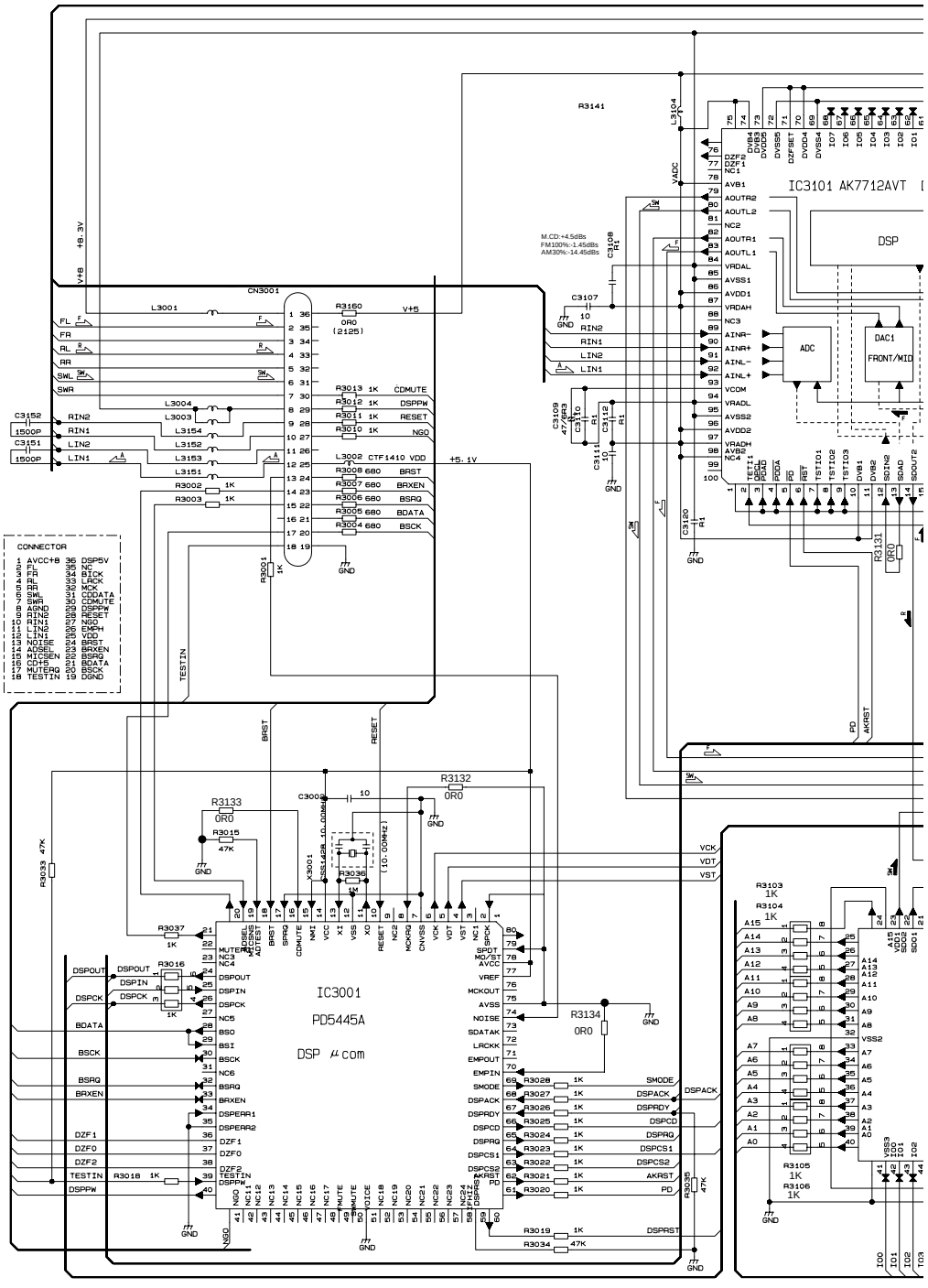



IC1902
PD6237A
IC1903
SED1540F0A
IC1904
SED1526F0A
LCD1901
CAW1471
EL1901
CEL1580

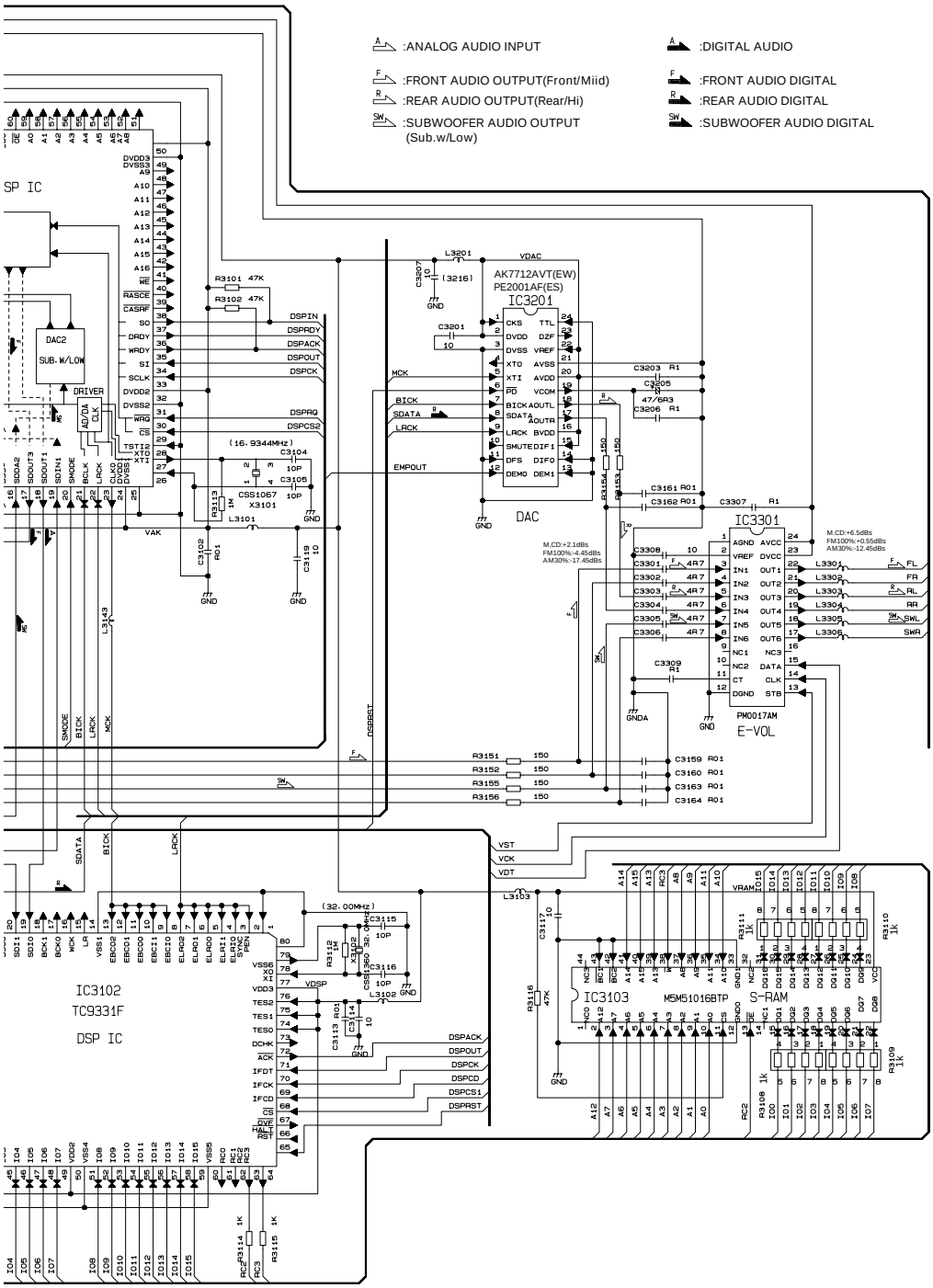
3.5 DSP UNIT(GUIDE PAGE)



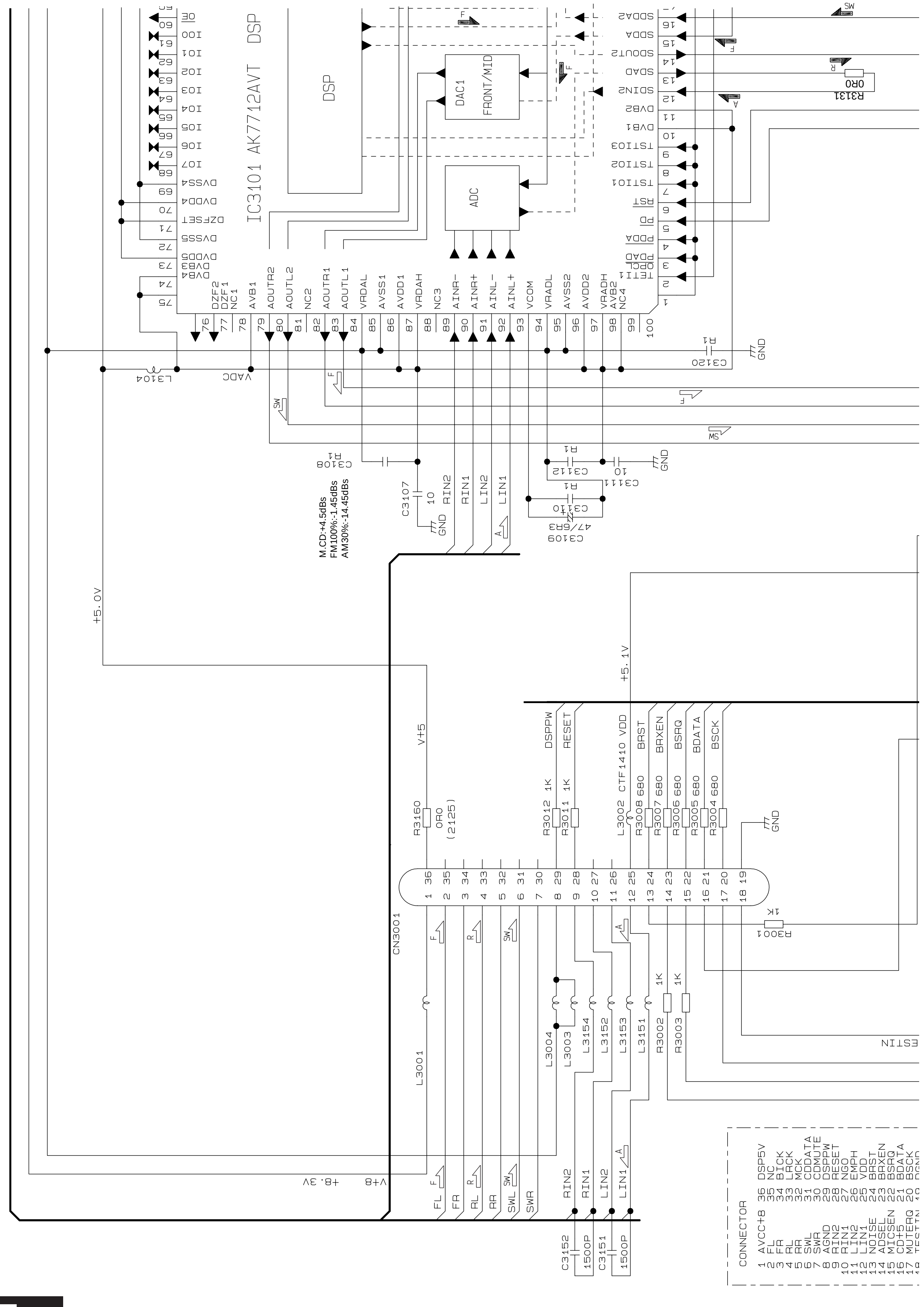
F-a

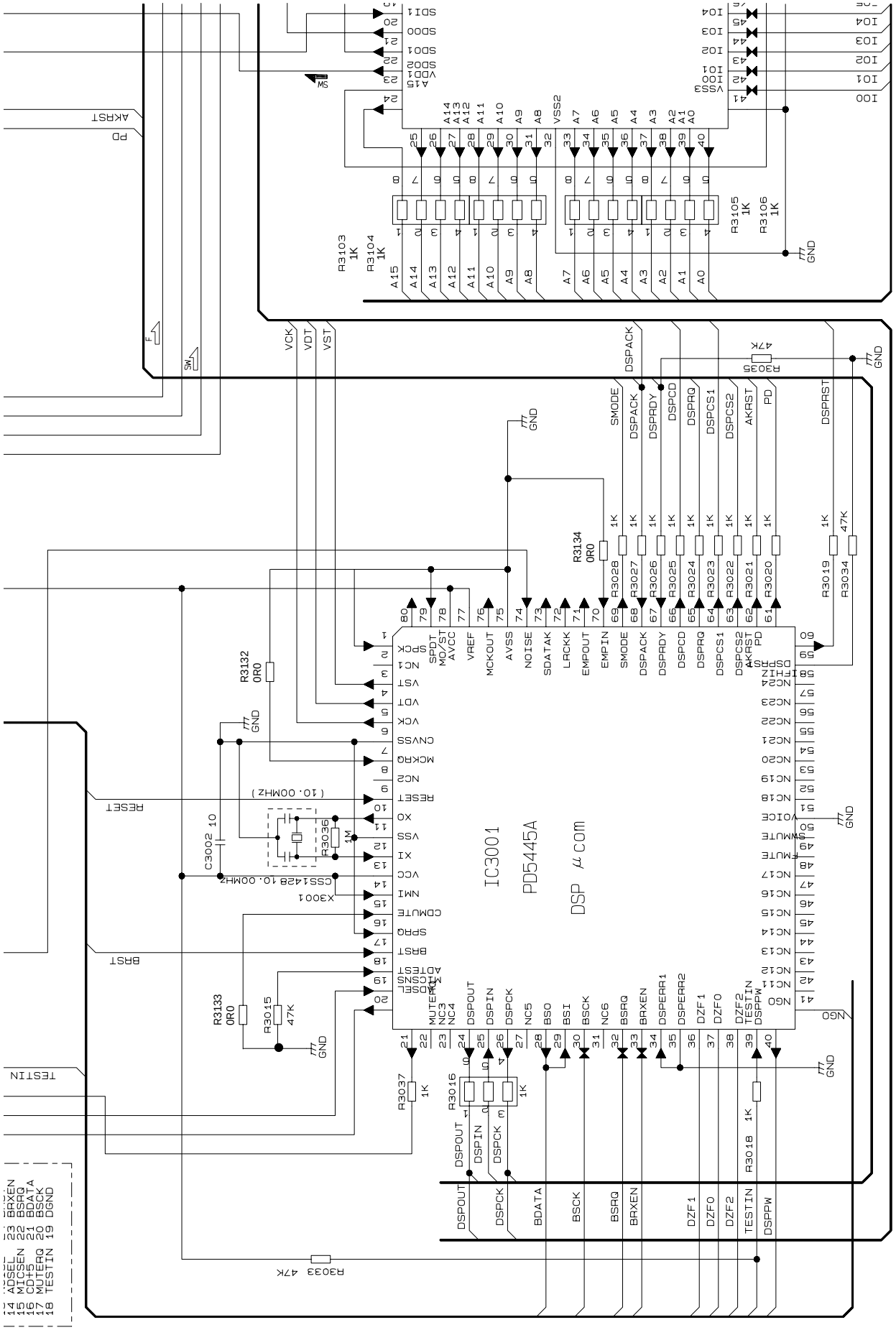


F-b

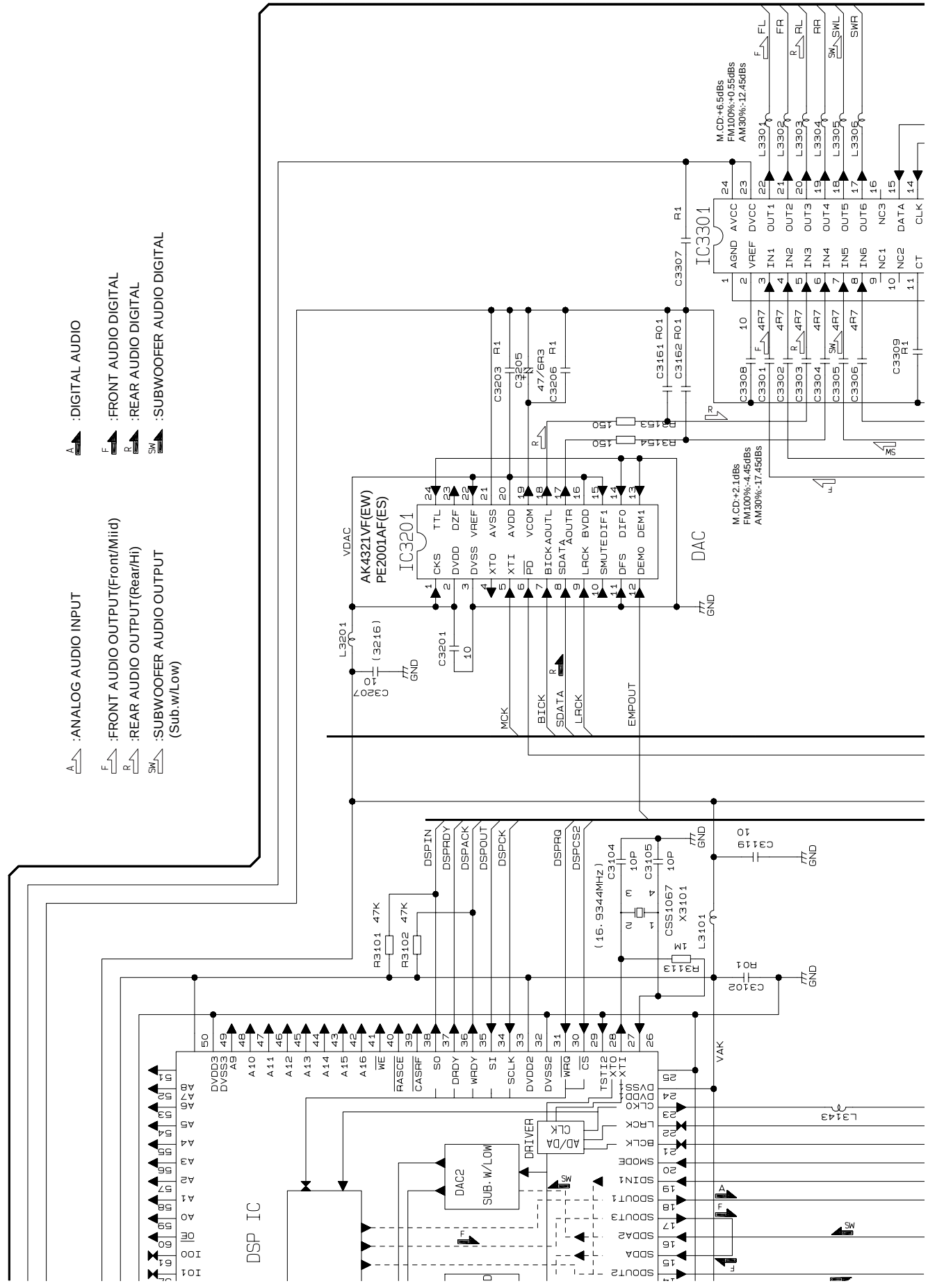

:ANALOG AUDIO INPUT
:FRONT AUDIO OUTPUT(Front/Miid)
:REAR AUDIO OUTPUT(Rear/Hi)
:SUBWOOFER AUDIO OUTPUT (Sub.w/Low)
:DIGITAL AUDIO
:FRONT AUDIO DIGITAL
:REAR AUDIO DIGITAL
:SUBWOOFER AUDIO DIGITAL
SP IC
DAC2
SUB-W/LOW
DRIVER
AD/DA CLK
(16.9344MHz)
CSS1067 X3101
VAK
DSPIN
DSPRDY
DSPACK
DSPOUT
DSPCK
DSPRQ
DSPCS2
DSPRST
VDAC
AK7712AVT(EW)
PE2001AF(ES)
IC3201
DAC
MCK
BICK
SDATA
LRCK
EMPOUT
IC3301
PM0017AM
E-VOL
FL
FR
RL
RR
SWL
SWR
IC3102
TC9331F
DSP IC
(32.00MHz)
VDSP
VST
VCK
VDT
IC3103
M5M51016BTP
S-RAM
VRAM

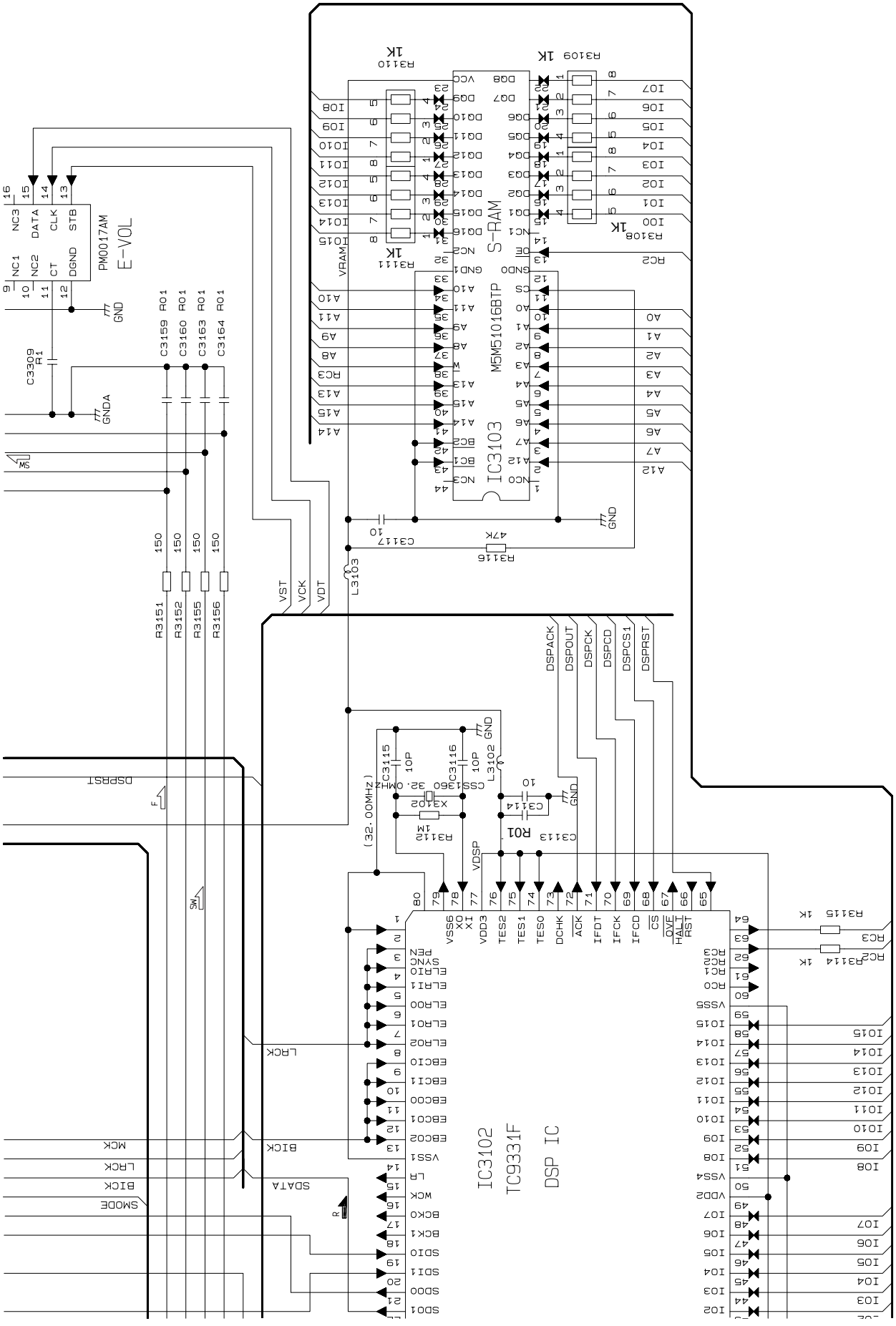
F-b
F-a


IC3101 AK7712AVT DSP
DSP
DAC1 FRONT/MID
ADC
OE
IO0
IO1
IO2
IO3
IO4
IO5
IO6
IO7
DVSS4
DVDD4
DZFSET
DVSS5
DVDD5
DVB3
DVB4
DZF2
DZF1
NC1
AVB1
AOUTR2
AOUTL2
NC2
AOUTR1
AOUTL1
VRDAL
AVSS1
AVDD1
VRDAH
NC3
AINR-
AINR+
AINL-
AINL+
VCOM
VRADL
AVSS2
AVDD2
VRADH
AVB2
NC4
SDDA2
SDDA
SDOUT2
SDAD
SDIN2
DVB2
DVB1
TSTIO3
TSTIO2
TSTIO1
RST
PD
PDDA
PDAD
OPCL
TETI1
R3131
0R0
C3120
R1
GND
L3104
VADC
C3108
C3107
10
C3112
C3111
C3110
C3109
47/6R3
RIN2
RIN1
LIN2
LIN1
M.CD:+4.5dBs
FM100%:-1.45dBs
AM30%:-14.45dBs
+5.0V
+5.1V
V+5
R3160
0R0
(2125)
DSPPW
RESET
R3012 1K
R3011 1K
L3002 CTF1410 VDD
BRST
BRXEN
BSRQ
BDATA
BSCK
R3008 680
R3007 680
R3006 680
R3005 680
R3004 680
CN3001
R3001
1K
L3001
L3004
L3003
L3154
L3152
L3153
L3151
R3002
R3003
ESTIN
V+8
+8.3V
FL
FR
RL
RR
SWL
SWR
C3152
1500P
C3151
CONNECTOR
1 AVCC+8 36 DSP5V
2 FL 35 NC
3 FR 34 BICK
4 RL 33 LRCK
5 RR 32 MCK
6 SWL 31 CDDATA
7 SWR 30 CDMUTE
8 AGND 29 DSPPW
9 RIN2 28 RESET
10 RIN1 27 NGO
11 LIN2 26 EMPH
12 LIN1 25 VDD
13 NOISE 24 BRST
14 ADSEL 23 BRXEN
15 MICSEN 22 BSRQ
16 CD+5 21 BDATA
17 MUTERQ 20 BSCK

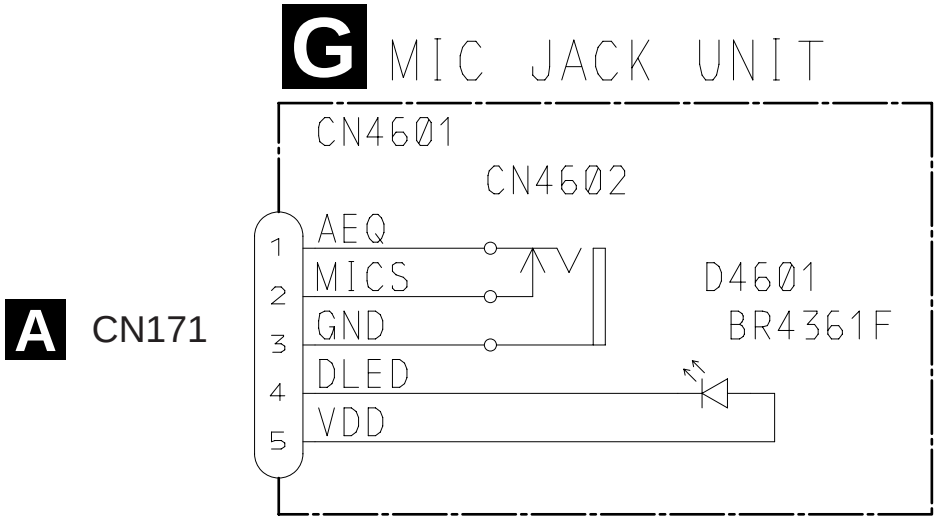

IC3001
PD5445A
DSP μcom
X3001
C3002 10
R3036 1M
R3037 1K
R3016 1K
R3018 1K
R3103 1K
R3104 1K
R3105 1K
R3106 1K
R3133 0R0
R3134 0R0
R3132 0R0
R3015 47K
R3033 47K
R3035 47K
R3019 1K
R3034 47K
R3020 1K
R3021 1K
R3022 1K
R3023 1K
R3024 1K
R3025 1K
R3026 1K
R3027 1K
R3028 1K
GND
RESET
BRST
TESTIN
AKRST
PD
VCK
VDT
VST
DSPACK
SMODE
DSPRDY
DSPCD
DSPRQ
DSPCS1
DSPCS2
AKRST
PD
DSPRST
DSPOUT
DSPIN
DSPCK
BDATA
BSCK
BSRQ
BRXEN
DZF1
DZF0
DZF2
TESTIN
DSPPW
ADSEL 14
MICSEN 15
CD+5 16
MUTERQ 17
TESTIN 18
BRXEN 23
BSRQ 22
BDATA 21
BSCK 20
DGND 19

F-a F-b


A :ANALOG AUDIO INPUT
F :FRONT AUDIO OUTPUT(Front/Miid)
R :REAR AUDIO OUTPUT(Rear/Hi)
SW :SUBWOOFER AUDIO OUTPUT (Sub.w/Low)
A :DIGITAL AUDIO
F :FRONT AUDIO DIGITAL
R :REAR AUDIO DIGITAL
SW :SUBWOOFER AUDIO DIGITAL
IC3201
AK4321VF(EW)
PE2001AF(ES)
DAC
VDAC
IC3301
M.CD+6.5dBs
FM100%:+0.55dBs
AM30%:-12.45dBs
M.CD+2.1dBs
FM100%:-4.45dBs
AM30%:-17.45dBs
DSP IC
DAC2
SUB.W/LOW
DRIVER
AD/DA CLK
X3101
(16.9344MHz)
CSS1067
VAK
MCK
BICK
SDATA
LRCK
EMPOUT


IC3103
M5M51016BTP
S-RAM
IC3102
TC9331F
DSP IC
E-VOL
PM0017AM
VRAM1
VST
VCK
VDT
LRCK
BICK
MCK
SDATA
SMODE
DSPRST
DSPACK
DSPOUT
DSPCK
DSPCD
DSPCS1
DSPRST
VDSP
GND
GNDA
(32.00MHz)

3.6 MIC JACK UNIT

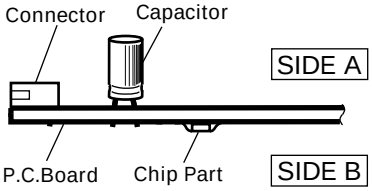


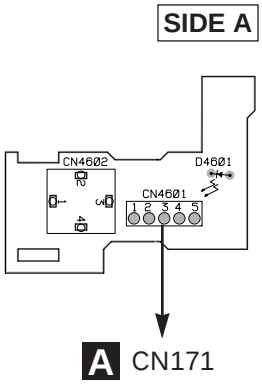
4. PCB CONNECTION DIAGRAM

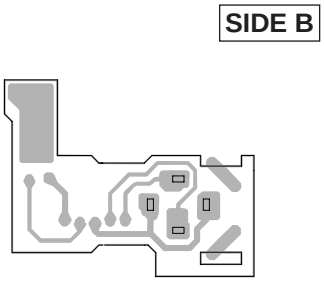
4.1 MIC JACK UNIT

NOTE FOR PCB DIAGRAMS

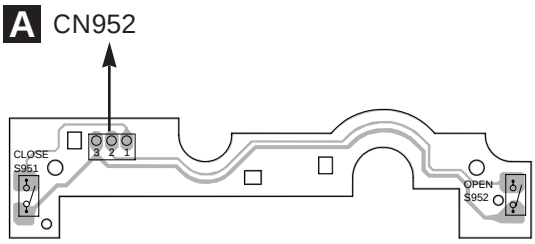
1. The parts mounted on this PCB include all necessary parts for several destination.
   For further information for respective destinations, be sure to check with the schematic diagram.
2. Viewpoint of PCB diagrams



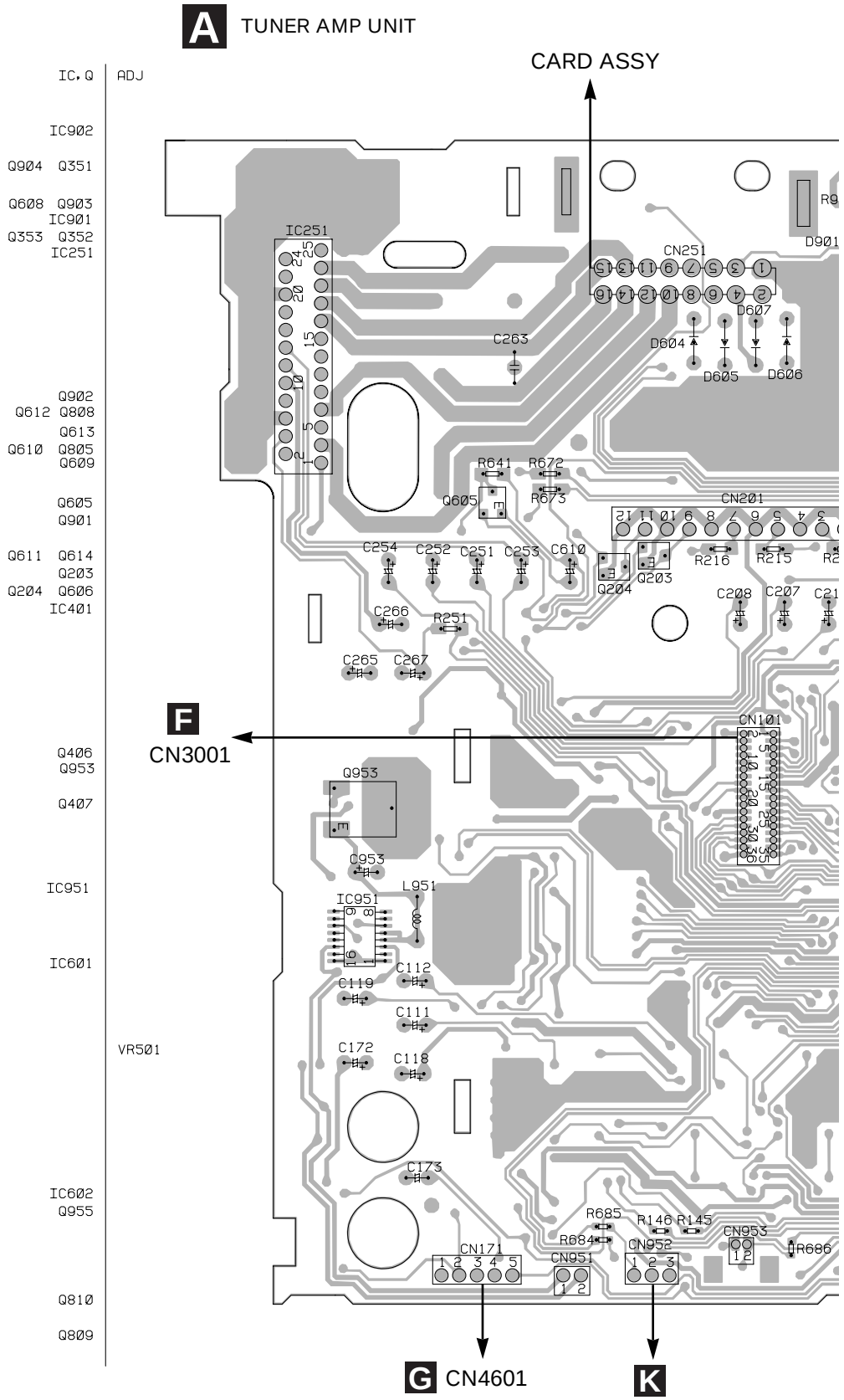




4.2 SWITCH PCB

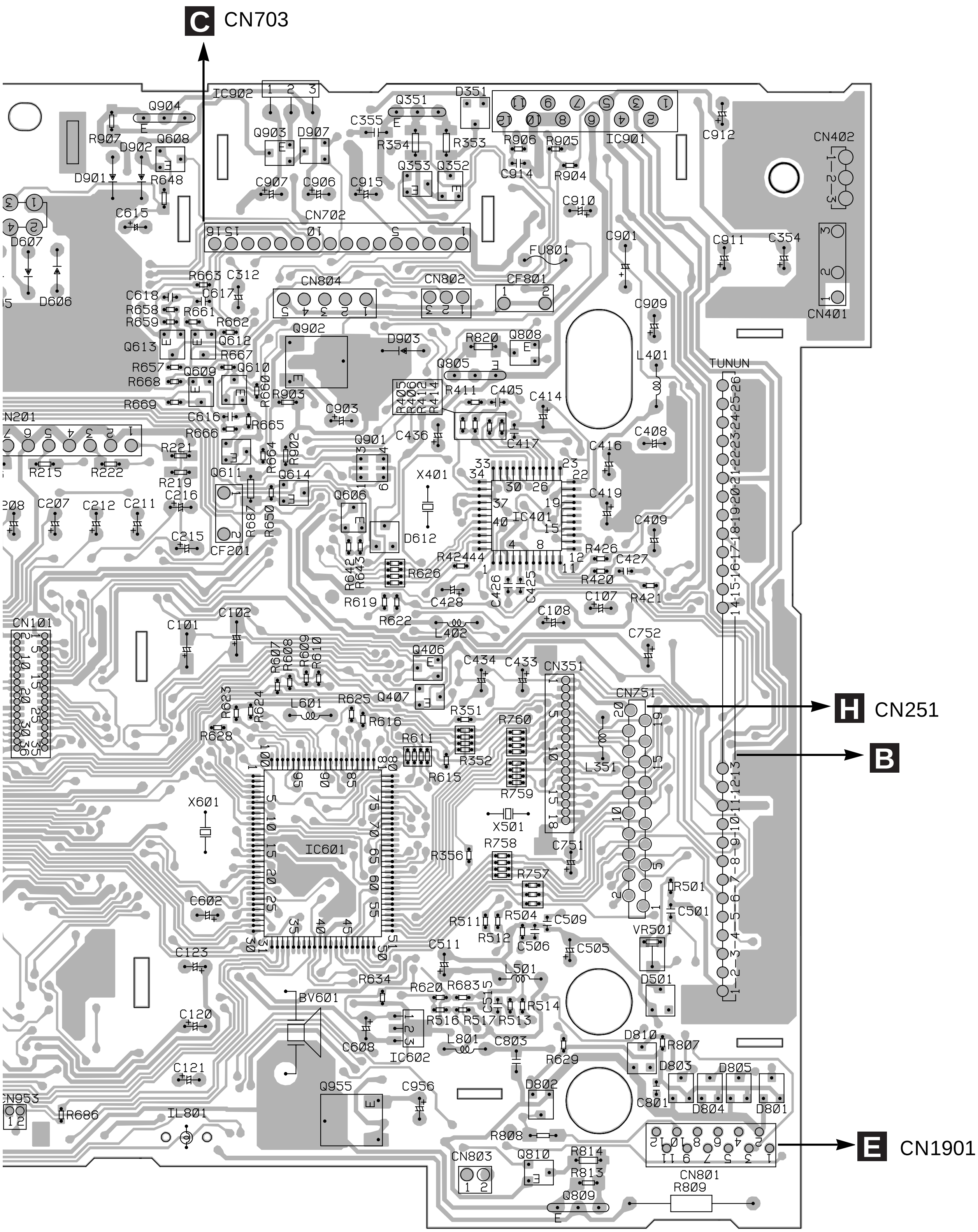


4.3 TUNER AMP UNIT



A

SIDE A

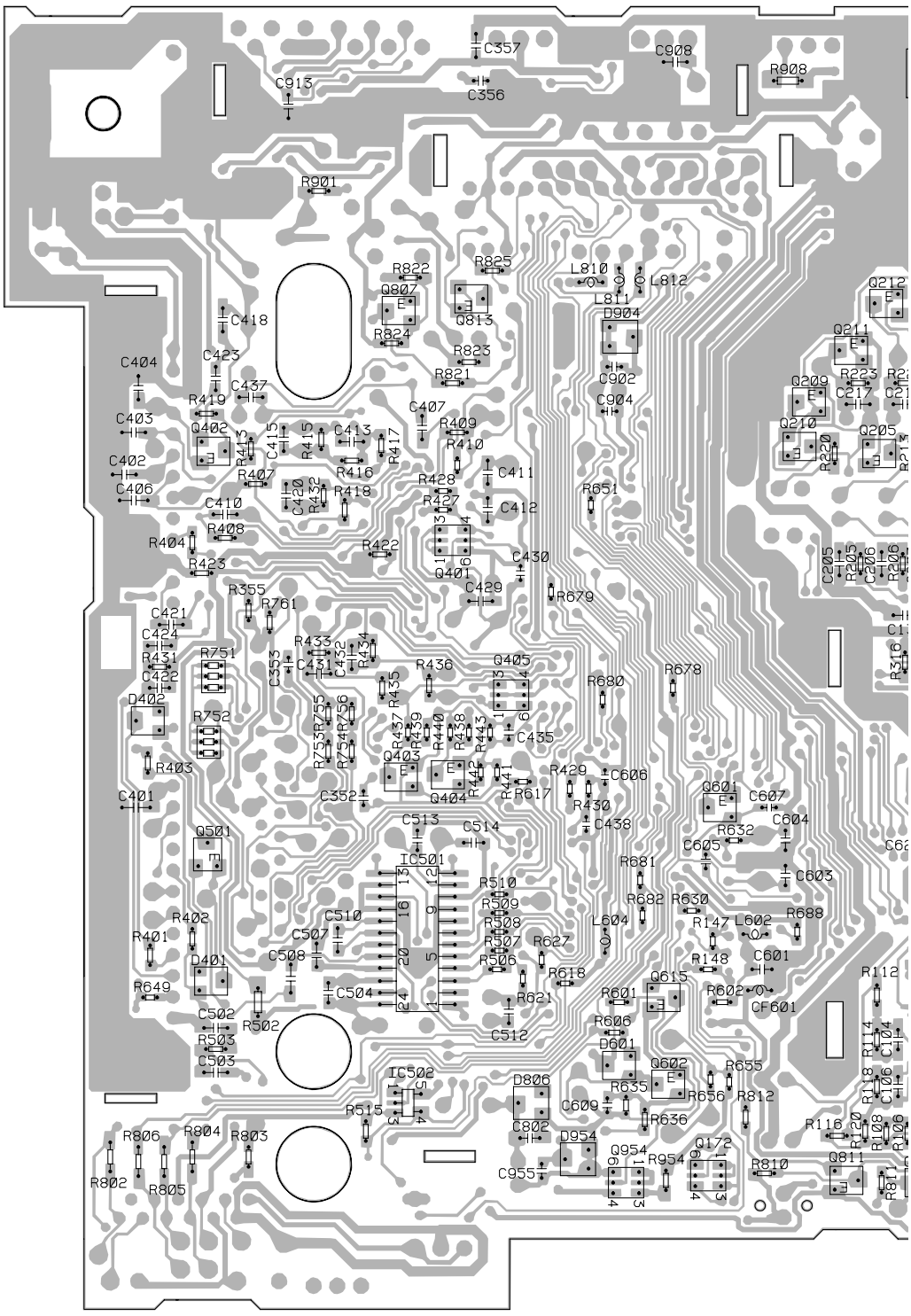

C CN703
H CN251
B
E CN1901
TUNUN
IC601
IC401
IC901
IC902
CN702
CN804
CN802
CN801
CN351
CN751
CN101
CN401
CN402
CN803

B

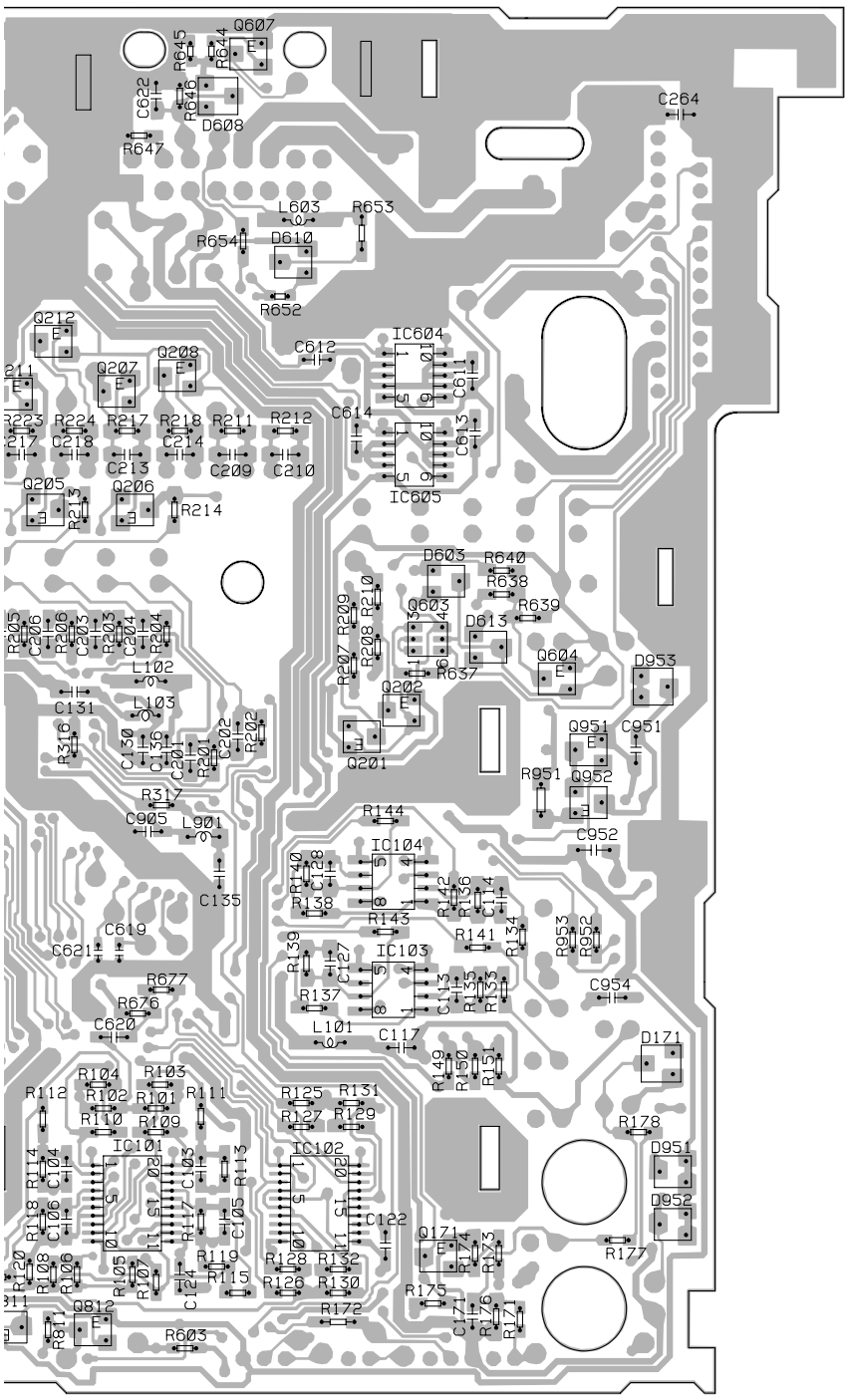
C

D

A TUNER AMP UNIT



SIDE B



IC, Q

Q607

Q212
Q807 IC604
Q813 Q208
Q211 Q207

Q209

Q402 Q210
Q205 Q206
IC605

Q603

Q401 Q604

Q202

Q405 Q951
Q201
Q952

IC104
Q403
Q601
Q404

Q501
IC103

IC501
Q615

IC101
IC102

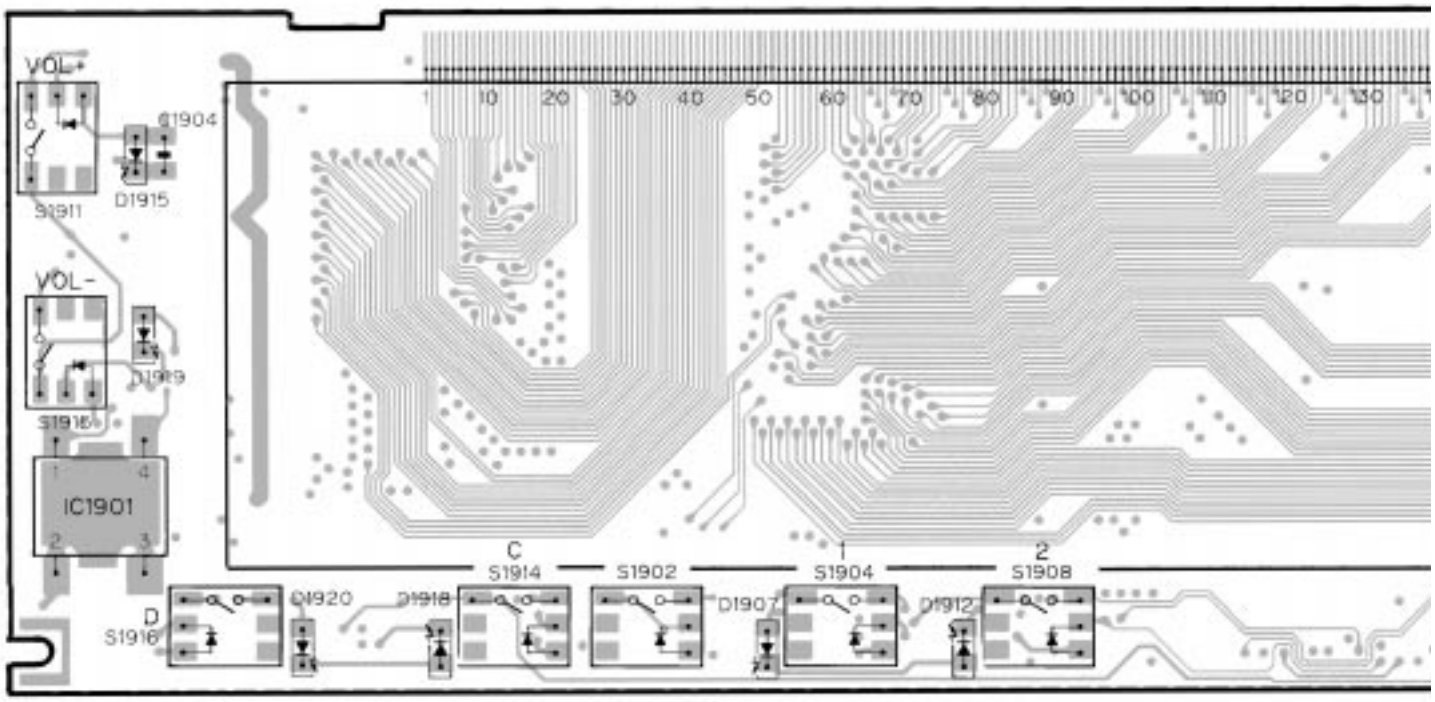
Q602
IC502
Q171

Q172
Q954 Q811
Q812

4.4 KEYBOARD UNIT

E KEYBOARD UNIT

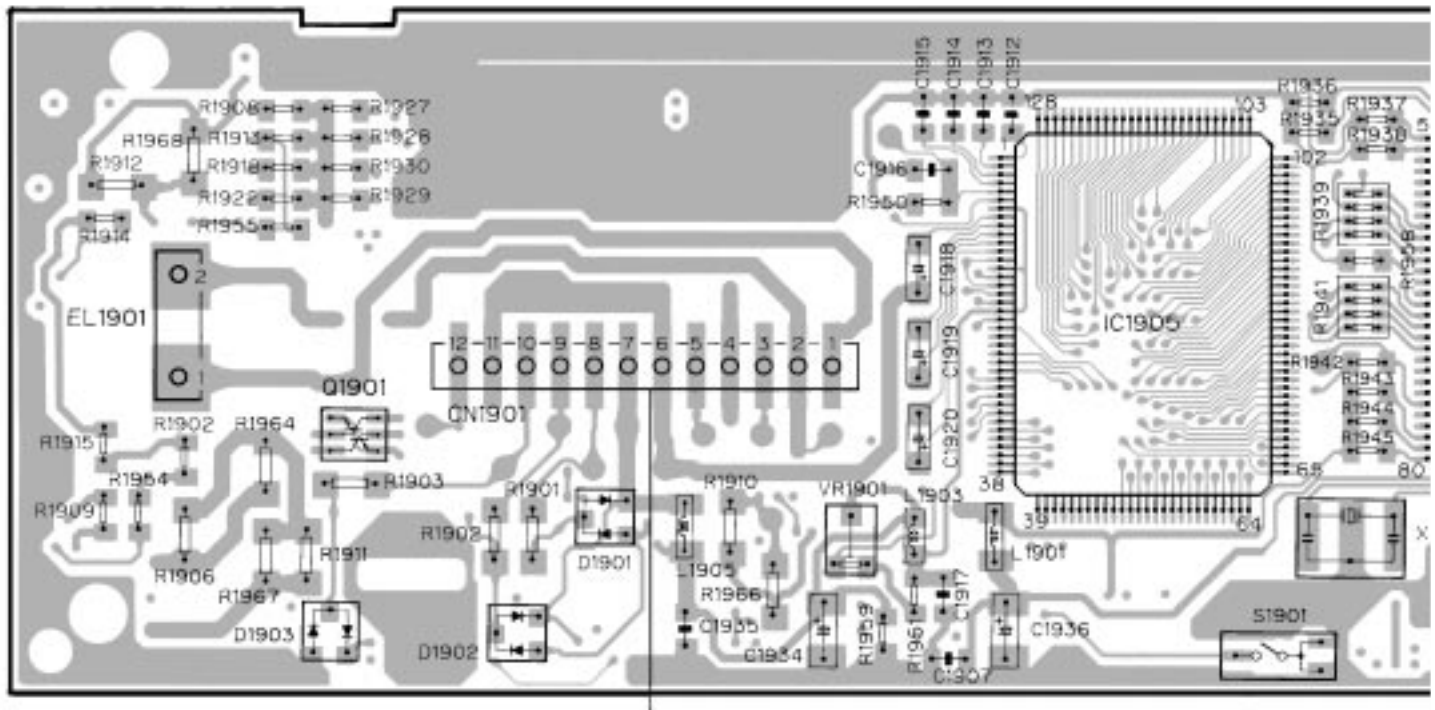
IC IC1901



E KEYBOARD UNIT

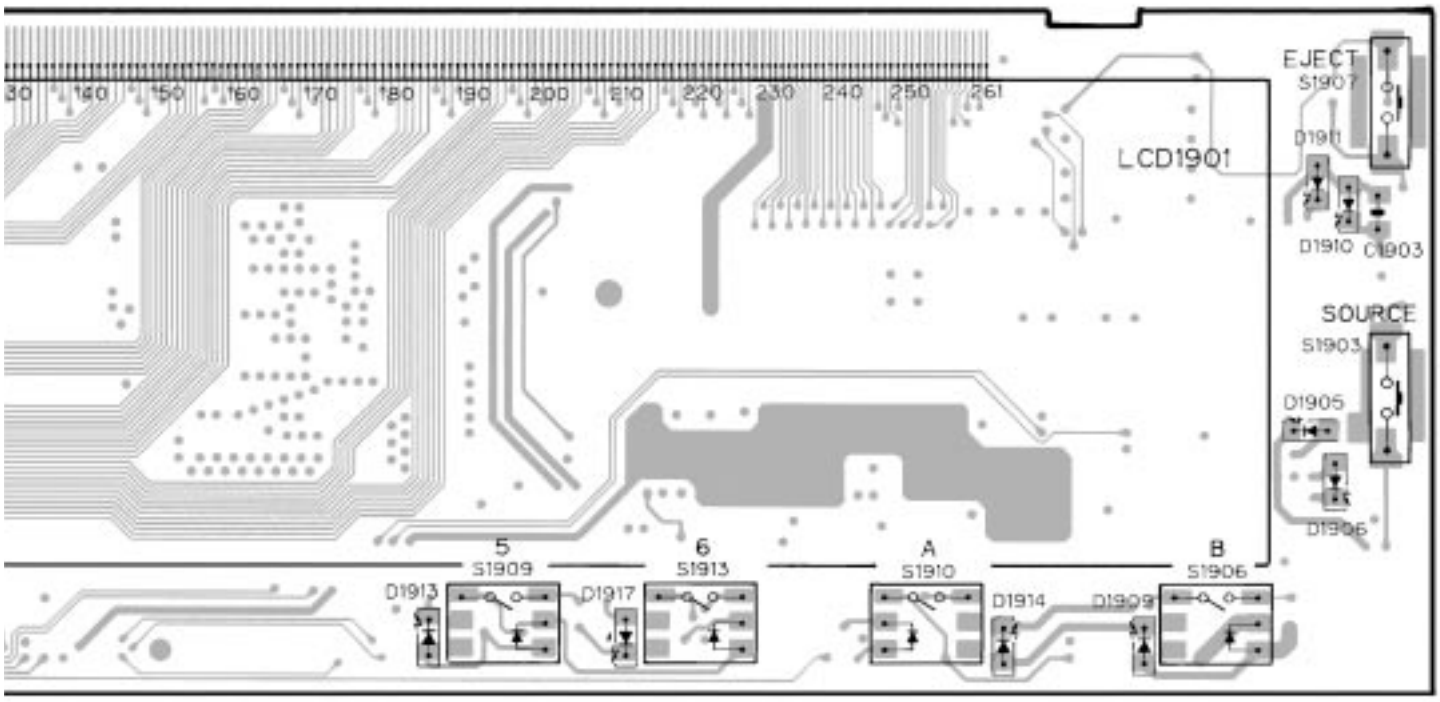
IC, Q Q1901 IC1905

ADJ VR1901

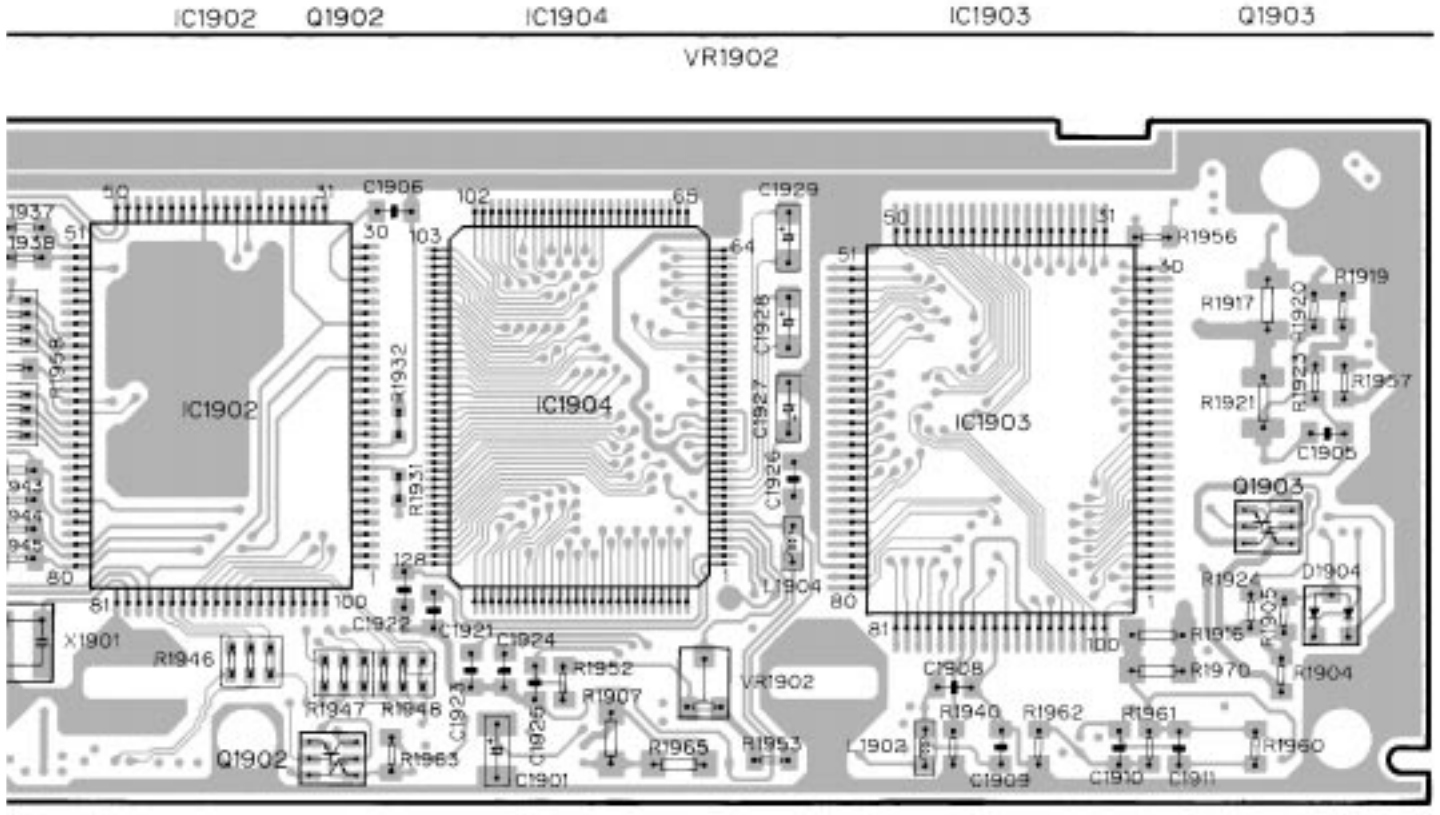


A CN801

SIDE A


EJECT
S1907
D1911
LCD1901
D1910
C1903
SOURCE
S1903
D1905
D1906
5
S1909
6
S1913
A
S1910
B
S1906
D1913
D1917
D1914
D1909

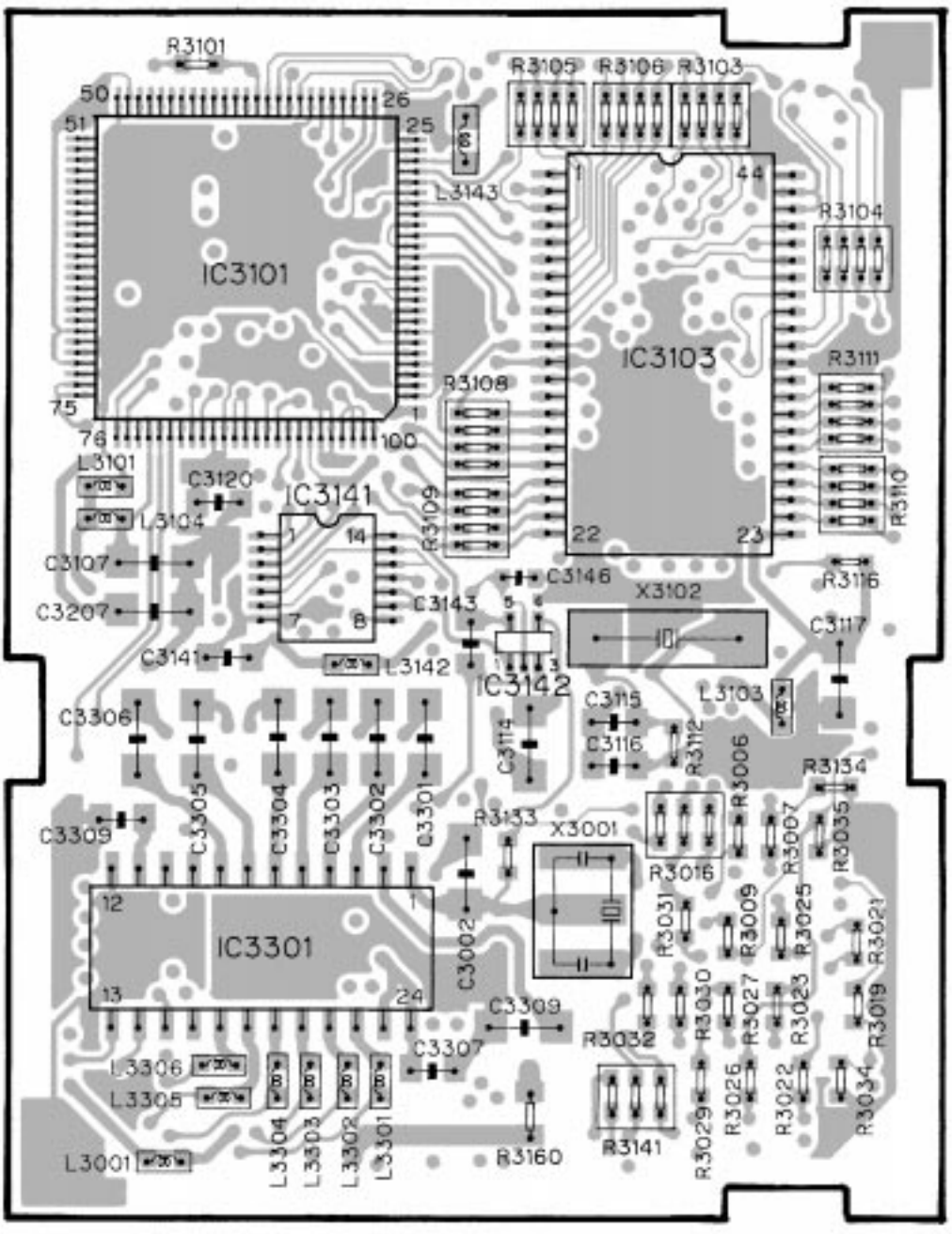
SIDE B


IC1902
Q1902
IC1904
IC1903
Q1903
VR1902
C1906
C1929
R1956
R1919
R1917
R1920
R1923
R1957
R1921
C1905
Q1903
D1904
R1924
R1916
R1970
R1904
C1908
R1940
R1962
R1961
R1960
C1909
C1910
C1911
L1902
R1932
R1931
C1928
C1927
C1926
L1904
X1901
R1946
R1947
R1948
C1922
C1921
C1924
R1952
R1907
C1923
C1925
R1965
R1953
C1901
R1963
VR1902

4.5 DSP UNIT

SIDE A

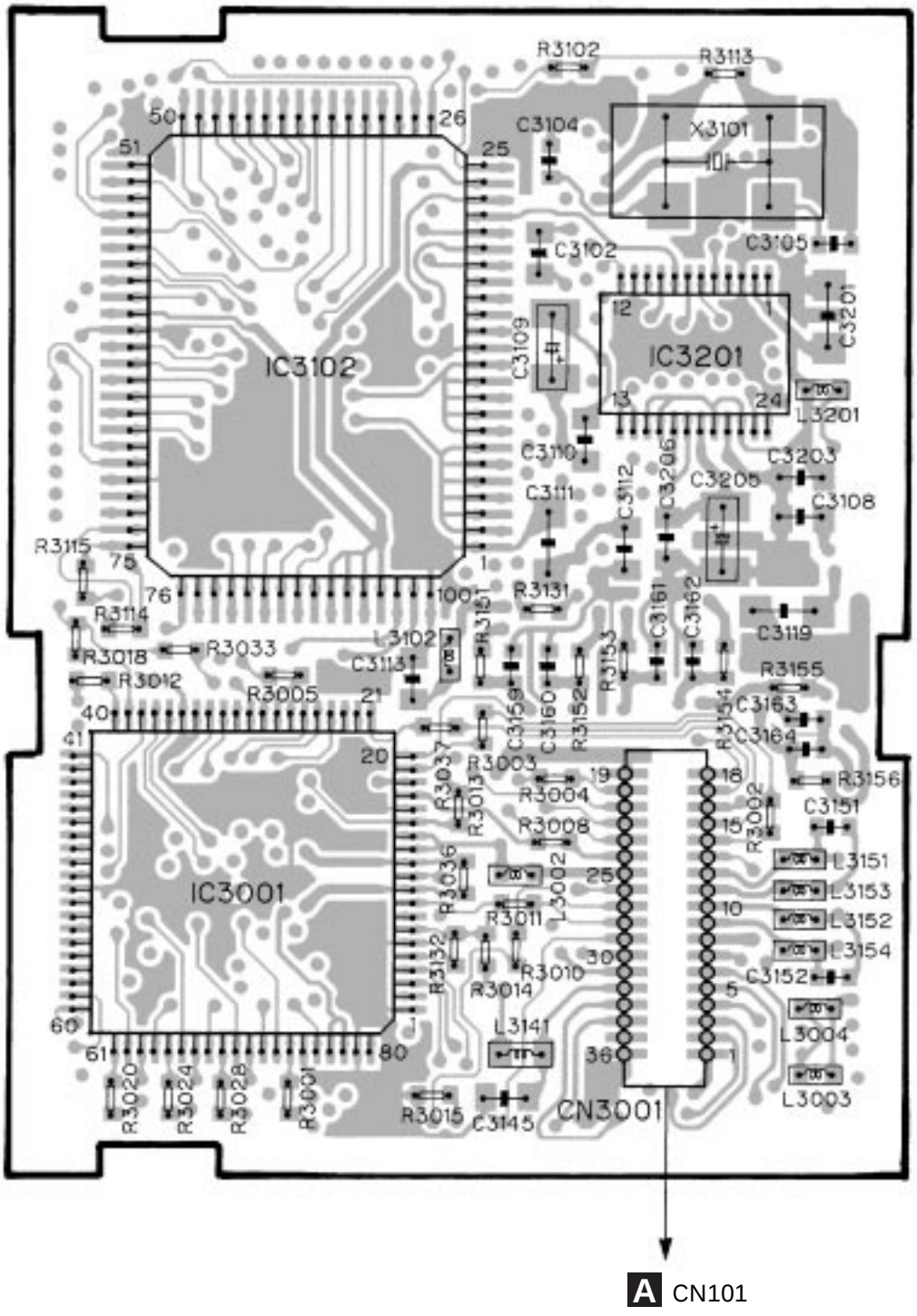
F DSP UNIT



IC
IC3101
IC3103
IC3141
IC3142
IC3301

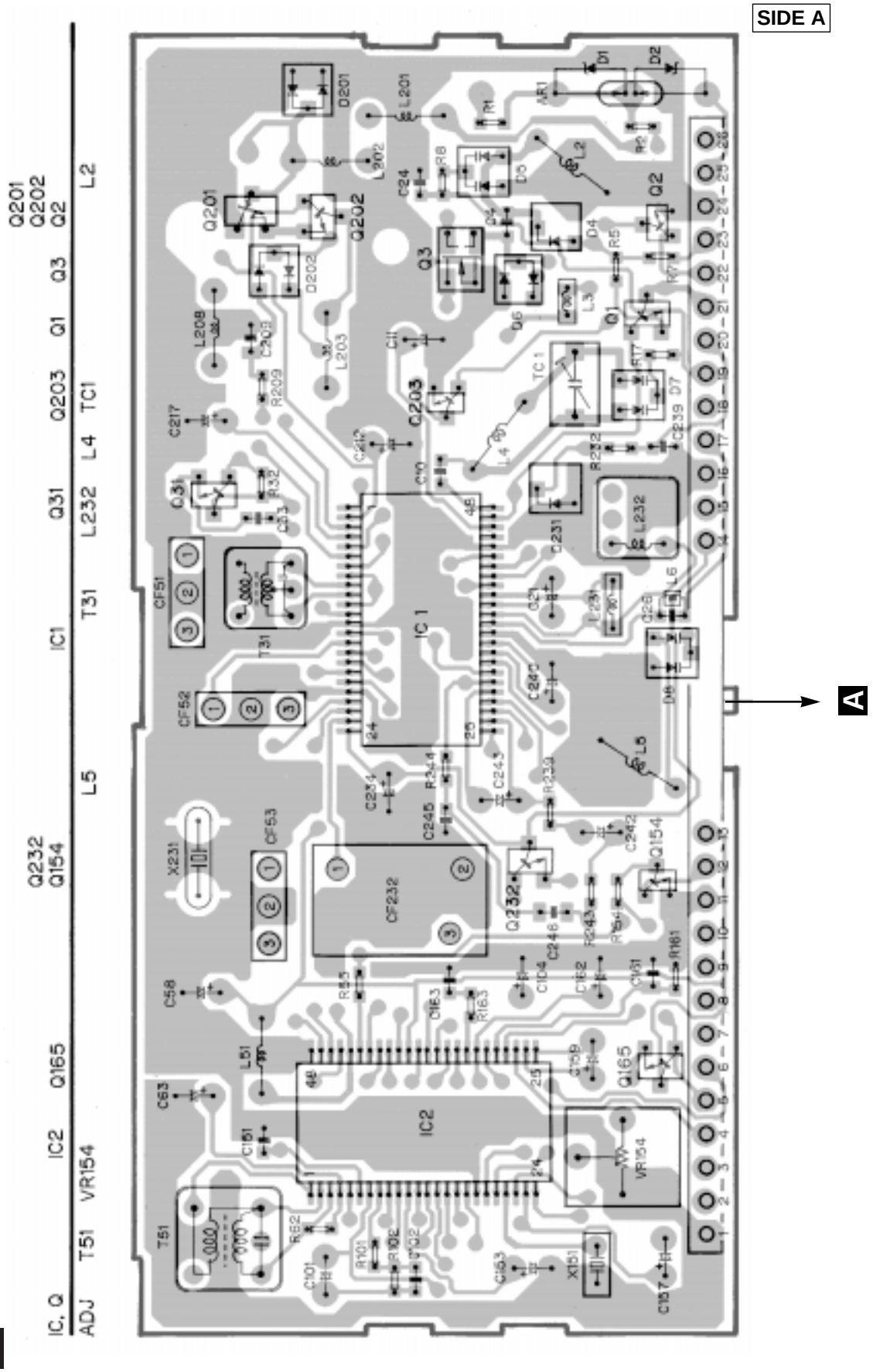
SIDE B

F DSP UNIT

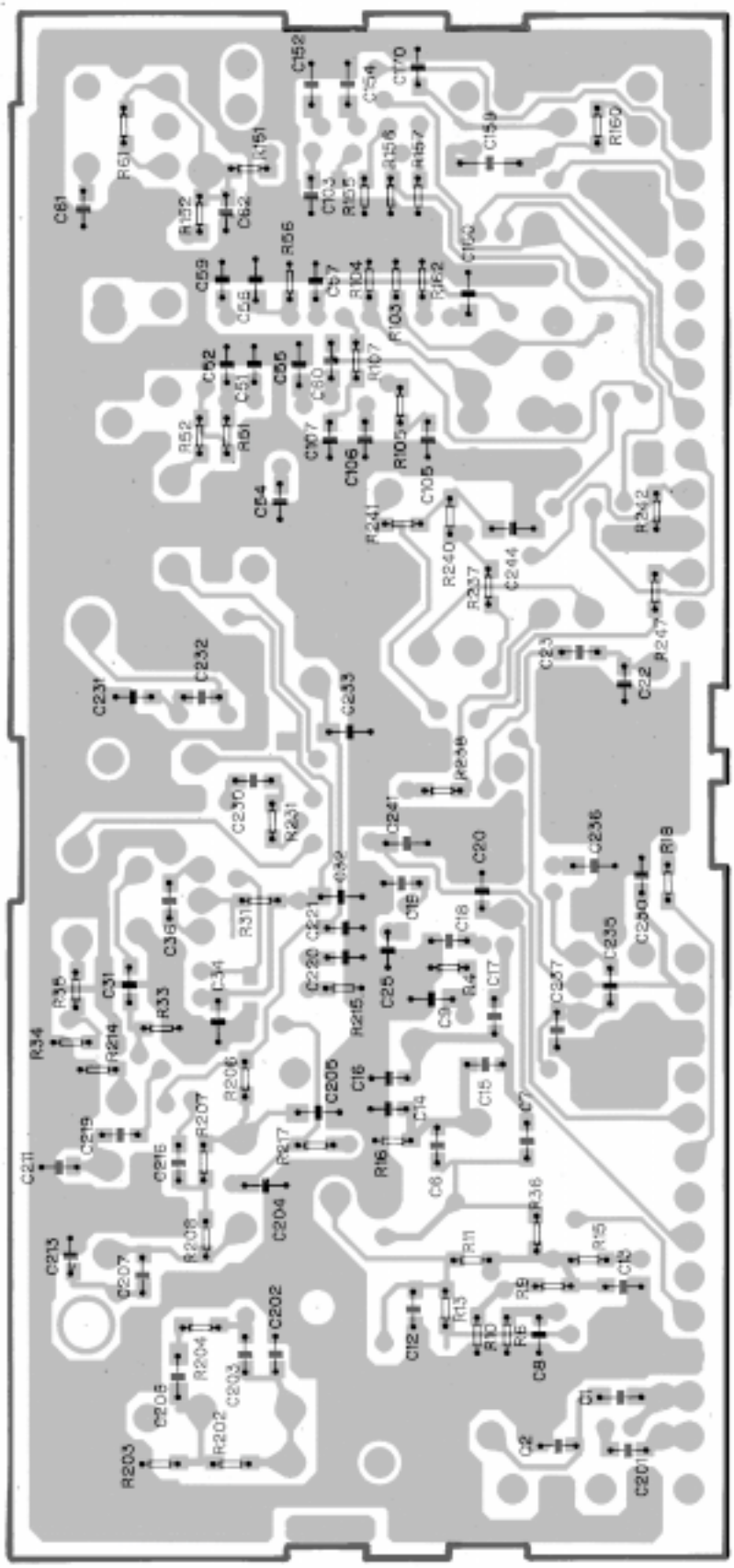


A CN101

4.6 FM/AM TUNER UNIT

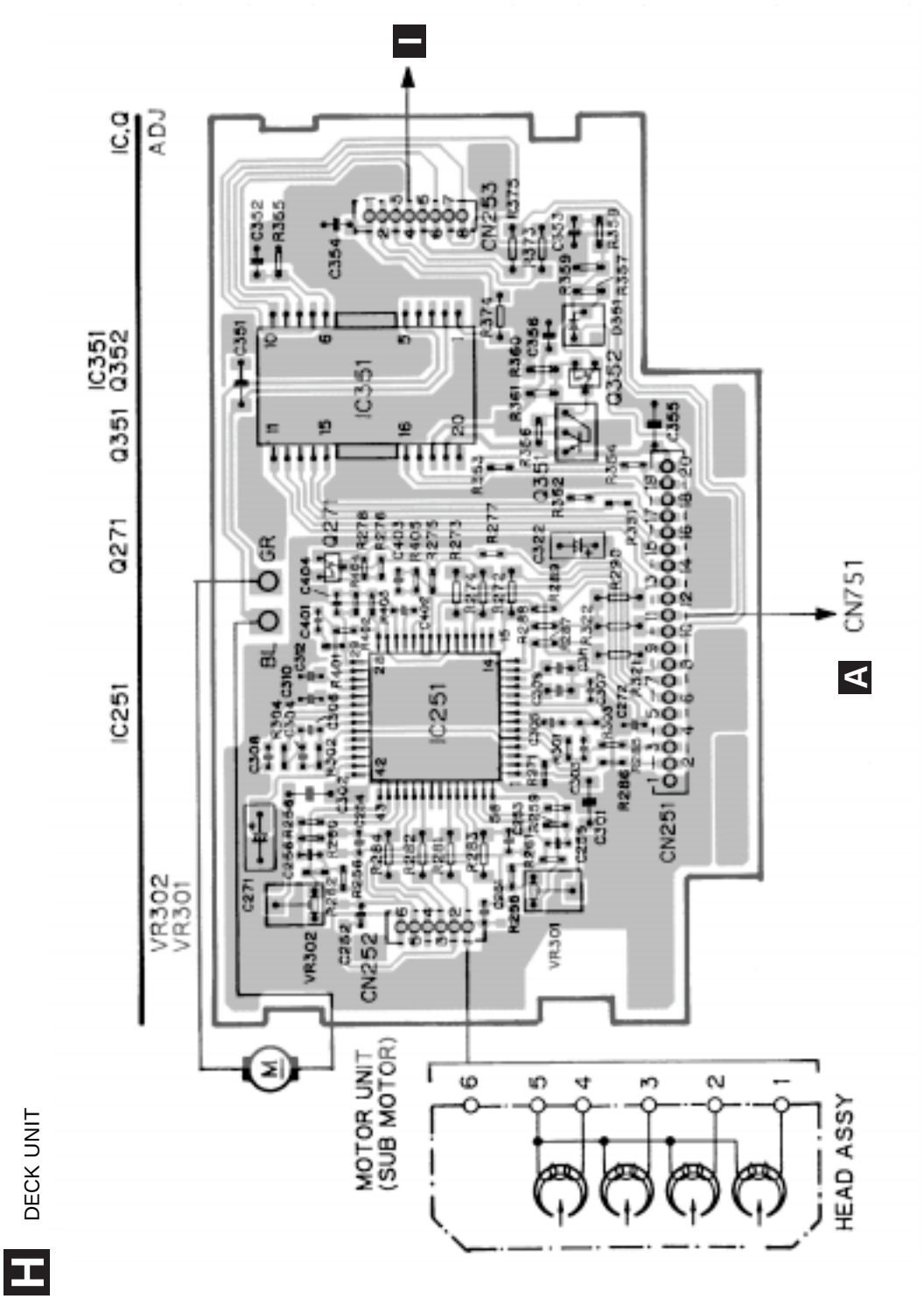


SIDE B



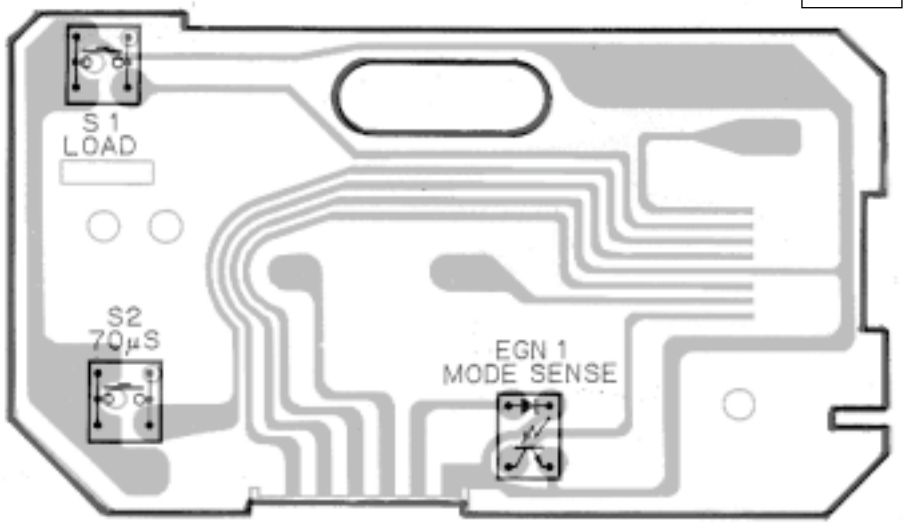
B FM/AM TUNET UNIT

4.7 CASSETTE MECHANISM MODULE



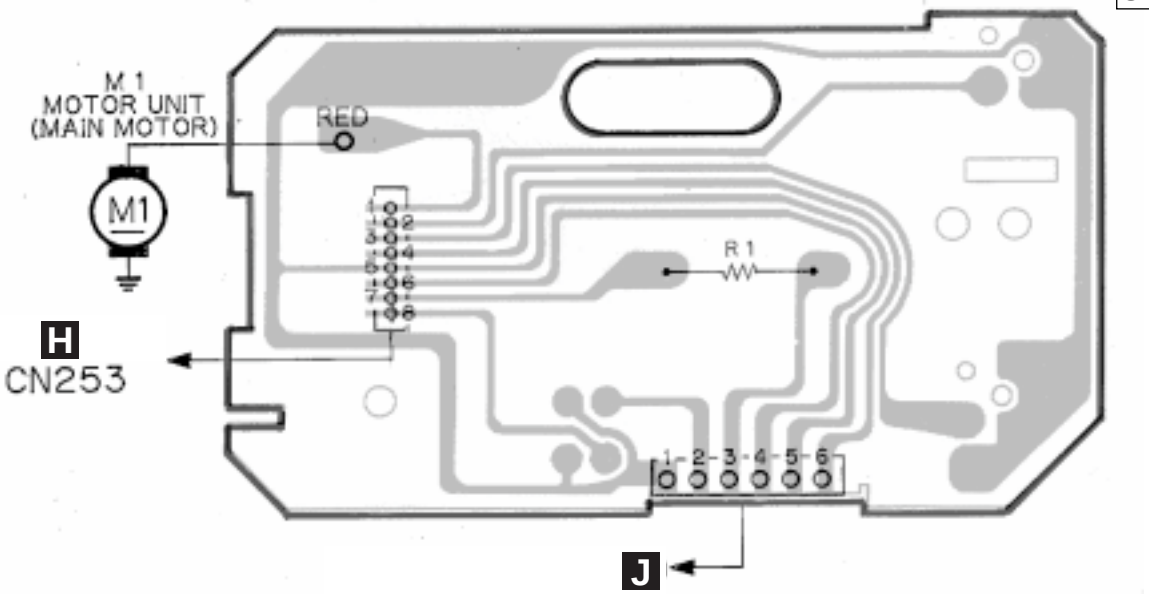
I PCB UNIT

SIDE A

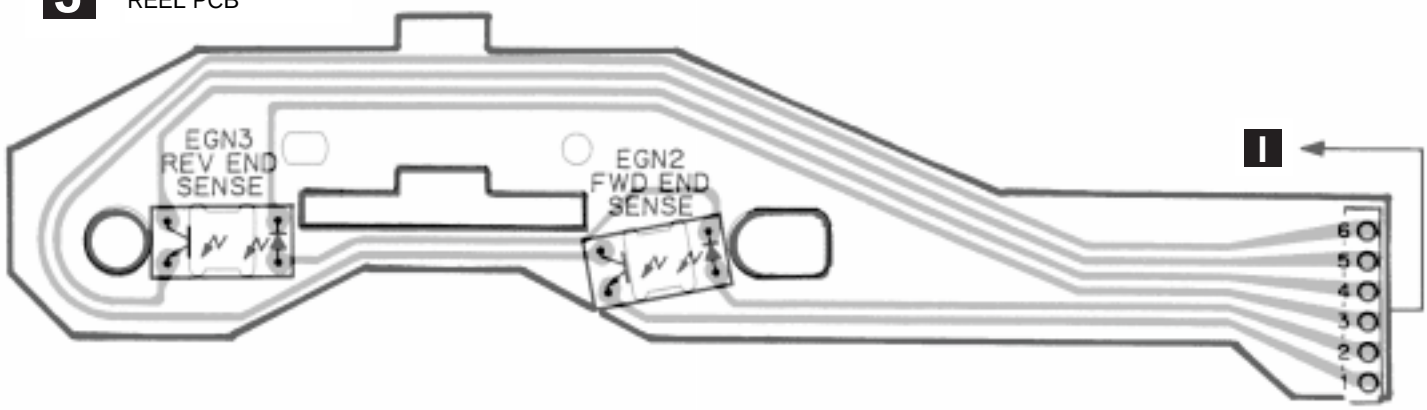


I PCB UNIT

SIDE B

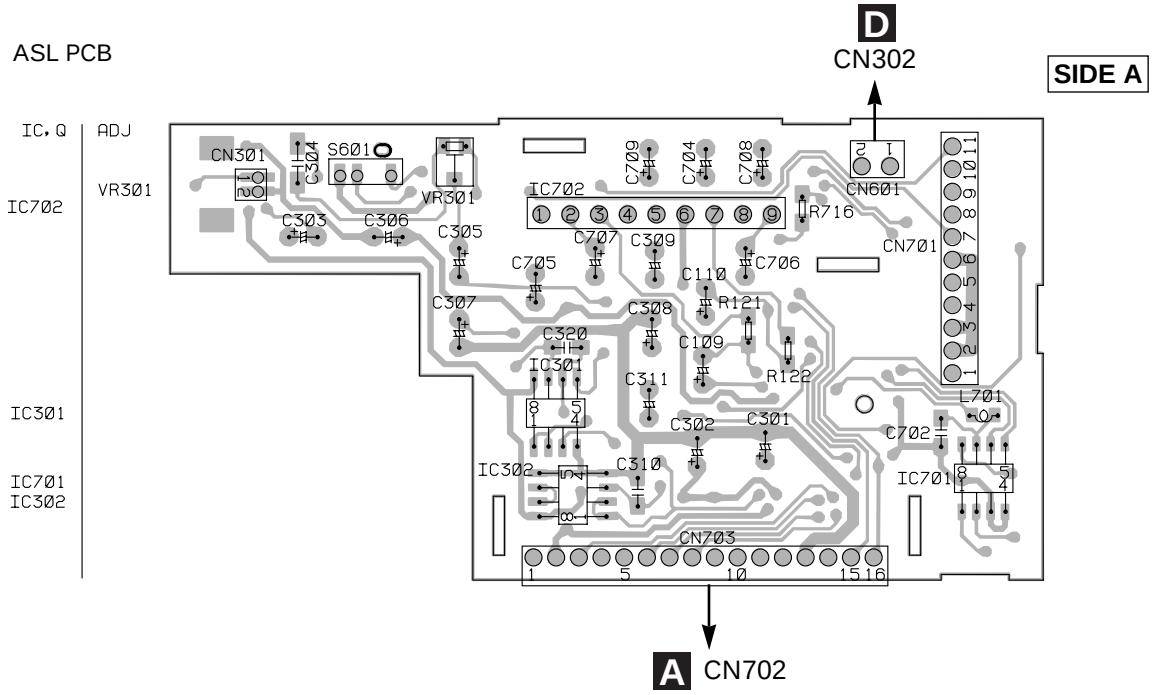


J REEL PCB



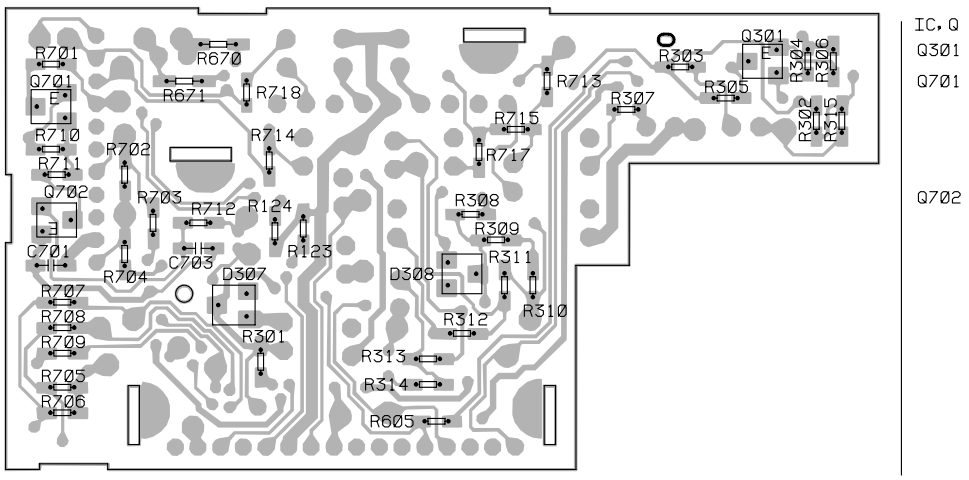
4.8 ASL UNIT

C ASL PCB

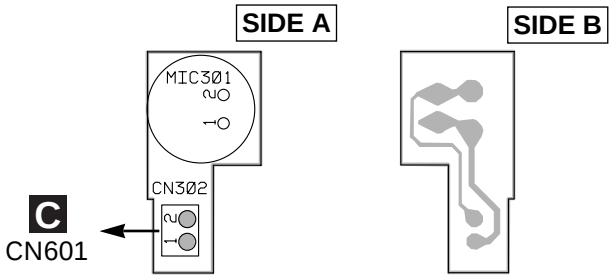


C ASL PCB

SIDE B



D MIC PCB



5. ELECTRICAL PARTS LIST

NOTE:

- Parts whose parts numbers are omitted are subject to being not supplied.
- The part numbers shown below indicate chip components.

Chip Resistor

RS1/○S○○○J,RS1/○○S○○○J

Chip Capacitor (except for CQS.....)

CKS....., CCS....., CSZS.....

B Unit Number : CWE1416(EW)
Unit Name : FM/AM Tuner Unit

MISCELLANEOUS

=====Circuit Symbol & No.		===Part Name	Part No.
IC	1	IC	PA4023B
IC	2	IC	PA4024A
Q	1	Transistor	2SC2412K
Q	2	Transistor	DTC124EU
Q	3	FET	3SK263
Q	31	Transistor	2SC2412K
Q	154	Transistor	DTC124EU
Q	165	Transistor	2SC2412K
Q	201	FET	2SK932
Q	202	Transistor	2SC2412K
Q	203	Transistor	DTC124EU
D	4	Diode	1SV250
D	5	Diode	KV1410-F1
D	7	Diode	KV1410-F1
D	8	Diode	KV1410-F1
D	201	Diode	MA157
D	202	Diode	MA157
D	231	Diode	SVC253
L	2	Coil	CTC1108
L	3	Inductor	LCTB2R2K2125
L	4	Coil	CTC1108
L	5	Coil	CTC1107
L	6	Inductor	LCTBR15K1608
L	51	Ferri-Inductor	LAU150K
L	201	Ferri-Inductor	LAU4R7K
L	202	Ferri-Inductor	LAU330K
L	203	Inductor	CTF1287
L	208	Inductor	LAU121K
L	231	Inductor	LCTA3R3J3225
T	31	Coil	CTE1116
T	51	Coil	CTC1136
TC	1		CCL1046
CF	51	Ceramic Filter	CTF1292
CF	52	Ceramic Filter	CTF1292
CF	53	Ceramic Filter	CTF1292
CF	232	Ceramic Filter	CTF1348
X	151	918.5Hz	CSS1365
X	231	Crystal Resonator 10.26MHz	CSS1111
VR	154	Semi-fixed 150kΩ(B)	CCP1213
AR	1		DSP-201M

RESISTORS

=====Circuit Symbol & No.		===Part Name	Part No.
R	1		RS1/16S0R0J
R	4		RS1/16S154J
R	5		RS1/16S391J
R	6		RS1/16S223J
R	7		RS1/16S123J
R	8		RS1/16S332J
R	9		RS1/16S473J
R	10		RS1/16S223J
R	11		RS1/16S124J
R	13		RS1/16S563J
R	15		RS1/16S271J
R	16		RS1/16S104J
R	17		RS1/16S332J
R	18		RS1/16S332J
R	31		RS1/16S470J
R	32		RS1/16S822J
R	33		RS1/16S822J
R	34		RS1/16S331J
R	35		RS1/16S331J
R	51		RS1/16S271J
R	52		RS1/16S560J
R	55		RS1/16S102J
R	56		RS1/16S823J
R	61		RS1/16S392J
R	62		RS1/16S393J
R	101		RS1/16S272J
R	102		RS1/16S682J
R	103		RS1/16S333J
R	104		RS1/16S334J
R	105		RS1/16S683J
R	107		RS1/16S222J
R	151		RS1/16S222J
R	152		RS1/16S393J
R	154		RS1/16S104J
R	155		RS1/16S273J
R	156		RS1/16S243J
R	157		RS1/16S203J
R	160		RS1/16S222J
R	161		RS1/16S563J
R	162		RS1/16S105J
R	163		RS1/16S222J
R	202		RS1/16S223J
R	203		RS1/16S225J
R	204		RS1/16S103J
R	206		RS1/16S220J
R	207		RS1/16S101J
R	208		RS1/16S102J
R	209		RS1/16S471J
R	214		RS1/16S822J
R	215		RS1/16S822J
R	217		RS1/16S102J
R	231		RS1/16S272J
R	232		RS1/16S473J
R	237		RS1/16S103J
R	238		RS1/16S104J
R	239		RS1/16S104J
R	240		RS1/16S332J
R	241		RS1/16S202J
R	243		RS1/16S123J
R	244		RS1/16S103J

=====Circuit Symbol & No.	Part Name	Part No.
R 247		RS1/16S123J
CAPACITORS		
C 1		CCSQCH6R0D50
C 2		CCSRCK2R0C50
C 4		CCSRCH820J50
C 6		CCSRCH820J50
C 8		CKSRYB103K25
C 9		CKSQYB104K16
C 10		CCSRCKR50C50
C 11		CEJA1R0M50
C 12		CCSRCH100D50
C 13		CKSRYB222K50
C 14		CCSRCH220J50
C 16		CCSRCH8R0D50
C 17		CKSRYB222K50
C 18		CKSRYB103K25
C 19		CKSRYB222K50
C 20		CKSRYB222K50
C 21		CEJA100M16
C 22		CCSRTH9R0D50
C 23		CCSRTH120J50
C 24		CCSRCH471J50
C 25		CKSRYB103K25
C 31		CKSRYB103K25
C 32		CKSQYB472K50
C 33		CCSRCH5R0C50
C 34		CKSQYB104K16
C 36		CCSRRH201J50
C 51		CKSRYB223K25
C 52		CKSRYB103K25
C 54		CCSRCH470J50
C 55		CKSQYB223K25
C 56		CKSQYB104K16
C 57		CKSRYB472K50
C 58		CEJA330M10
C 59		CKSRYB103K25
C 61		CCSRCH270J50
C 62		CKSRYB103K25
C 63		CEJAR15M50
C 101		CEJANP100M10
C 102		CKSRYB182K50
C 103		CKSRYB682K25
C 104		CEJA2R2M50
C 105		CKSRYB103K25
C 106		CCSRCH151J50
C 107		CKSRYB103K25
C 151		CKSRYB472K50
C 152		CKSQYB104K16
C 153		CEJA3R3M50
C 154		CKSQYB104K16
C 157		CEJA3R3M50
C 158		CKSYB474K16
C 159		CEJA220M6R3
C 160		CKSQYB104K16
C 161		CKSQYB104K16
C 162		CEJA3R3M50
C 163		CKSRYB102K50
C 170		CCSRCH100D50
C 201		CCSRCH471J50
C 202		CCSRCH100D50
C 203		CKSRYB332K50
C 204		CKSQYB473K16
C 205		CKSQYB473K16
C 206		CKSQYB104K16
C 207		CCSRCH560J50
C 209		CKSQYB104K16
C 211		CCSRCH101J50

=====Circuit Symbol & No.	Part Name	Part No.
C 212		CEJA470M6R3
C 213		CKSRYB103K25
C 216		CCSRCH101J50
C 217		CEJA1R5M50
C 219		CCSRCH471J50
C 220		CKSRYB103K25
C 230		CKSRYB103K25
C 231		CCSRCH330J50
C 232		CCSRCH150J50
C 233		CKSQYB104K16
C 234		CEJA330M10
C 235		CKSRYB332K50
C 236		CKSQYB473K16
C 237		CCSRCH120J50
C 239		CKSRYB472K50
C 240		CEJAR47M50
C 241		CKSQYB104K16
C 242		CEJAR47M50
C 243		CEJAR33M50
C 244		CKSQYB473K16
C 245		CKSRYB123K25
C 246		CKSQYB473K16
C 250		CCSRCH471J50

B Unit Number : CWE1485(ES)
Unit Name : FM/AM Tuner Unit

MISCELLANEOUS

IC	1	IC	PA4023B
IC	2	IC	PA4024A
Q	1	Transistor	2SC2412KLN
Q	2	Transistor	DTC124EU
Q	3	FET	3SK263
Q	31	Transistor	2SC2412KLN
Q	201	FET	2SK932
Q	202	Transistor	2SC2412KLN
Q	203	Transistor	DTC124EU
D	1	Diode	RD39JS
D	2	Diode	RD39JS
D	4	Diode	1SV250
D	5	Diode	KV1410-F1
D	6	Diode	MA157
D	7	Diode	KV1410-F1
D	8	Diode	KV1410-F1
D	201	Diode	MA157
D	202	Diode	MA157
D	231	Diode	SVC253
L	2	Coil	CTC1108
L	3	Inductor	LCTB2R2K2125
L	4	Coil	CTC1108
L	5	Coil	CTC1107
L	6	Inductor	LCTBR15K1608
L	51	Ferri-Inductor	LAU150K
L	201	Ferri-Inductor	LAU4R7K
L	202	Ferri-Inductor	LAU330K
L	203	Inductor	CTF1287
L	208	Inductor	LAU121K
L	231	Inductor	LCTA3R3J3225
T	31	Coil	CTE1117-B-TX
T	51	Coil	CTC1136-A-TX
CF	51	Ceramic Filter	CTF1290
CF	52	Ceramic Filter	CTF1290
CF	53	Ceramic Filter	CTF1290
CF	232	Ceramic Filter	CTF1348
X	151	918.5Hz	CSS1365
X	231	Crystal Resonator 10.26MHz	CSS1111
VR	154	Semi-fixed 150kΩ(B)	CCP1213

=====Circuit Symbol & No.	===Part Name	Part No.
RESISTORS		
R 1		RS1/16S225J
R 2		RS1/16S225J
R 4		RS1/16S154J
R 5		RS1/16S391J
R 6		RS1/16S223J
R 7		RS1/16S123J
R 8		RS1/16S332J
R 9		RS1/16S473J
R 10		RS1/16S223J
R 11		RS1/16S124J
R 13		RS1/16S563J
R 15		RS1/16S271J
R 16		RS1/16S104J
R 17		RS1/16S332J
R 18		RS1/16S332J
R 31		RS1/16S470J
R 32		RS1/16S822J
R 33		RS1/16S822J
R 34		RS1/16S331J
R 35		RS1/16S331J
R 51		RS1/16S271J
R 52		RS1/16S560J
R 55		RS1/16S102J
R 56		RS1/16S823J
R 61		RS1/16S392J
R 62		RS1/16S273J
R 101		RS1/16S272J
R 102		RS1/16S682J
R 103		RS1/16S333J
R 104		RS1/16S334J
R 105		RS1/16S683J
R 107		RS1/16S222J
R 151		RS1/16S222J
R 152		RS1/16S393J
R 155		RS1/16S273J
R 156		RS1/16S243J
R 157		RS1/16S203J
R 160		RS1/16S222J
R 161		RS1/16S563J
R 162		RS1/16S105J
R 163		RS1/16S223J
R 202		RS1/16S223J
R 203		RS1/16S225J
R 204		RS1/16S103J
R 206		RS1/16S220J
R 207		RS1/16S101J
R 208		RS1/16S102J
R 209		RS1/16S471J
R 214		RS1/16S822J
R 215		RS1/16S822J
R 217		RS1/16S102J
R 231		RS1/16S272J
R 232		RS1/16S473J
R 237		RS1/16S103J
R 238		RS1/16S104J
R 239		RS1/16S104J
R 240		RS1/16S332J
R 241		RS1/16S202J
R 243		RS1/16S183J
R 244		RS1/16S392J
R 247		RS1/16S123J

=====Circuit Symbol & No.	===Part Name	Part No.
CAPACITORS		
C 1		CCSQCH6R0D50
C 2		CCSRCK2R0C50
C 4		CCSRCH820J50
C 6		CCSRCH820J50
C 8		CKSRYB103K25
C 9		CKSQYB104K16
C 10		CCSRCKR50C50
C 11		CEJA1R0M50
C 12		CKSRYB222K50
C 13		CKSRYB222K50
C 14		CCSRCH220J50
C 15		CCSRCH6R0D50
C 16		CCSRCH8R0D50
C 17		CKSRYB222K50
C 18		CKSRYB103K25
C 19		CKSRYB222K50
C 20		CKSRYB222K50
C 21		CEJA100M16
C 22		CCSRTH9R0D50
C 23		CCSRTH120J50
C 24		CCSRCH471J50
C 25		CKSRYB103K25
C 31		CKSRYB103K25
C 32		CKSQYB472K50
C 33		CCSRCH5R0C50
C 34		CKSQYB104K16
C 36		CCSRRH201J50
C 51		CKSRYB223K25
C 52		CKSRYB103K25
C 54		CCSRCH470J50
C 55		CKSQYB223K25
C 56		CKSQYB104K16
C 57		CKSRYB472K50
C 58		CEJA330M10
C 59		CKSRYB103K25
C 60		CKSRYB102K50
C 61		CCSRCH270J50
C 62		CKSRYB103K25
C 63		CEJAR22M50
C 101		CEJANP100M10
C 102		CKSRYB182K50
C 103		CKSRYB682K25
C 104		CEJA2R2M50
C 105		CKSRYB103K25
C 106		CCSRCH151J50
C 107		CKSRYB103K25
C 151		CKSRYB472K50
C 152		CKSQYB104K16
C 153		CEJA3R3M50
C 154		CKSQYB104K16
C 157		CEJA3R3M50
C 158		CKSYB474K16
C 159		CEJA220M6R3
C 160		CKSQYB104K16
C 161		CKSQYB104K16
C 162		CEJA3R3M50
C 163		CKSRYB102K50
C 170		CCSRCH100D50
C 201		CCSRCH471J50
C 202		CCSRCH100D50
C 203		CKSRYB332K50
C 204		CKSQYB473K16
C 205		CKSQYB473K16
C 206		CKSQYB104K16
C 207		CCSRCH560J50

=====Circuit Symbol & No.	===Part Name	Part No.
C 209		CKSQYB104K16
C 211		CCSRCH101J50
C 212		CEJA470M6R3
C 213		CKSRYB103K25
C 216		CCSRCH101J50
C 217		CEJA1R5M50
C 219		CCSRCH471J50
C 220		CKSRYB103K25
C 230		CKSRYB103K25
C 231		CCSRCH330J50
C 232		CCSRCH150J50
C 233		CKSQYB104K16
C 234		CEJA330M10
C 235		CKSRYB332K50
C 236		CKSQYB473K16
C 237		CCSRCH120J50
C 239		CKSRYB472K50
C 240		CEJAR47M50
C 241		CKSQYB104K16
C 242		CEJAR47M50
C 243		CEJAR33M50
C 244		CKSQYB473K16
C 245		CKSRYB333K16
C 246		CKSQYB473K16
C 250		CCSRCH471J50

A

Unit Number : CWM5781(EW)
CWM5782(ES)
Unit Name : Tuner Amp Unit

MISCELLANEOUS

IC 101	IC	BA3131FS
IC 102	IC	BA3131FS
IC 103	IC	NJM2100M
IC 104	IC	NJM2100M
IC 251	IC	TDA7386
IC 401	IC	See Contrast Table
IC 501	IC	See Contrast Table
IC 502	IC	See Contrast Table
IC 601	IC	See Contrast Table
IC 602	IC	S-80734ANDYI
IC 604	IC	TPD1018F
IC 605	IC	TPD1018F
IC 901	IC	PA2024A
IC 902	IC	NJM7805FA
IC 951	IC	BA6288FS
Q 171	Transistor	2SC2412K
Q 172	Transistor	IMD2A
Q 203	Transistor	DTC314TK
Q 204	Transistor	DTC314TK
Q 207	Transistor	DTC314TK
Q 208	Transistor	DTC314TK
Q 211	Transistor	DTC314TK
Q 212	Transistor	DTC314TK
Q 401	Transistor	IMD2A
Q 402	Transistor	2SC2412K
Q 403	Transistor	See Contrast Table
Q 404	Transistor	See Contrast Table
Q 405	Transistor	See Contrast Table
Q 406	Transistor	See Contrast Table
Q 407	Transistor	See Contrast Table
Q 501	Transistor	See Contrast Table
Q 601	Transistor	DTA114EK
Q 602	Transistor	2SC2412K
Q 603	Transistor	IMD2A
Q 604	Transistor	DTC124EK

=====Circuit Symbol & No.	===Part Name	Part No.
Q 605	Transistor	DTC124EK
Q 606	Transistor	2SC2412K
Q 607	Transistor	2SC2412K
Q 608	Transistor	2SC2412K
Q 609	Transistor	2SA1162
Q 610	Transistor	DTC124EK
Q 611	Transistor	2SC2412K
Q 612	Transistor	2SC2412K
Q 613	Transistor	2SC2412K
Q 614	Transistor	2SA1162
Q 615	Transistor	DTC114EK
Q 805	Transistor	2SB1238
Q 807	Transistor	2SC2412K
Q 808	Transistor	DTC114EK
Q 809	Transistor	2SB1238
Q 810	Transistor	DTC143EK
Q 811	Transistor	2SC2412K
Q 812	Transistor	2SC2412K
Q 813	Transistor	DTA144EK
Q 901	Transistor	IMD2A
Q 902	Transistor	2SD1760F5
Q 903	Transistor	DTC124EK
Q 904	Transistor	2SB1243
Q 951	Transistor	DTC124EK
Q 952	Transistor	DTA114EK
Q 953	Transistor	2SD1760F5
Q 954	Transistor	IMD2A
Q 955	Transistor	2SD1760F5
D 171	Diode	MA3039(L)
D 401	Diode	See Contrast Table
D 402	Diode	See Contrast Table
D 601	Diode	MA152K
D 603	Diode	MA152WK
D 604	Diode	ERA15-02VH
D 605	Diode	ERA15-02VH
D 606	Diode	ERA15-02VH
D 607	Diode	ERA15-02VH
D 608	Diode	MA3062(H)
D 610	Diode	MA152WK
D 612	Diode	MA3075(M)
D 613	Diode	MA152K
D 801	Diode	MA153
D 802	Diode	MA153
D 803	Diode	MA153
D 804	Diode	MA153
D 805	Diode	MA153
D 806	Diode	MA3062(M)
D 810	Diode	MA3062(M)
D 901	Diode	ERA15-02VH
D 902	Diode	ERA15-02VH
D 903	Diode	ERA15-02VH
D 904	Diode	MA3056(M)
D 907	Diode	MA152WK
D 951	Diode	MA152K
D 952	Diode	MA152K
D 953	Diode	MA3075(H)
D 954	Diode	MA3056(M)
L 101	Inductor	LCTA2R2J3225
L 102	Inductor	LCTA2R2J3225
L 103	Inductor	CTF1420
L 401	Ferri-Inductor	LAU2R2K
L 402	Ferri-Inductor	LAU2R2K
L 501	Ferri-Inductor	See Contrast Table
L 601	Ferri-Inductor	LAU2R2K
L 603	Inductor	LCTA2R2J3225

Circuit Symbol & No.	Part Name	Part No.
L 604	Inductor	CTF1420
L 801	Ferri-Inductor	LAU2R2K
L 810	Inductor	CTF1420
L 811	Inductor	CTF1420
L 812	Inductor	CTF1420
L 901	Inductor	LCTB2R2K3216
CF 201	Filter	CTF1071
X 401	Crystal Resonator 7.200MHz	CSS1379
X 501	Crystal Resonator	See Contrast Table
X 601	12.58291MHz	CSS1402
IL 801	Lamp 14V40mA	CEL1359
VR 501	Semi-fixed	See Contrast Table
FU 801	Fuze 0.4A	ICP-N10
BV 601	Buzzer	CPV1011
	DSP Unit	CWX2237
	ASL Unit	CWM5783
	FM/AM Tuner Unit	See Contrast Table

RESISTORS

Circuit Symbol & No.	Part No.
R 101	RS1/10S102J
R 102	RS1/10S102J
R 103	RS1/10S473J
R 104	RS1/10S473J
R 105	RS1/10S102J
R 106	RS1/10S102J
R 107	RS1/10S473J
R 108	RS1/10S473J
R 109	RS1/10S473J
R 110	RS1/10S473J
R 111	RS1/10S122J
R 112	RS1/10S122J
R 113	RS1/10S362J
R 114	RS1/10S362J
R 115	RS1/10S332J
R 116	RS1/10S332J
R 117	RS1/10S473J
R 118	RS1/10S473J
R 119	RS1/10S102J
R 120	RS1/10S102J
R 125	RS1/10S473J
R 126	RS1/10S473J
R 127	RS1/10S473J
R 128	RS1/10S473J
R 129	RS1/10S473J
R 130	RS1/10S473J
R 131	RS1/10S102J
R 132	RS1/10S102J
R 133	RS1/10S103J
R 134	RS1/10S103J
R 135	RS1/10S103J
R 136	RS1/10S103J
R 137	RS1/10S103J
R 138	RS1/10S103J
R 139	RS1/10S103J
R 140	RS1/10S103J
R 141	RS1/10S331J
R 142	RS1/10S331J
R 143	RS1/10S331J
R 144	RS1/10S331J
R 145	RS1/16S102J
R 146	RS1/16S102J
R 147	RS1/16S102J
R 148	RS1/16S102J
R 149	RS1/10S103J

Circuit Symbol & No.	Part No.
R 150	RS1/10S121J
R 151	RS1/10S103J
R 171	RS1/10S471J
R 172	RS1/8S751J
R 173	RS1/10S103J
R 174	RS1/10S273J
R 175	RS1/10S104J
R 176	RS1/10S104J
R 177	RS1/10S222J
R 178	RS1/10S561J
R 201	RS1/10S331J
R 202	RS1/10S331J
R 203	RS1/10S331J
R 204	RS1/10S331J
R 205	RS1/10S331J
R 206	RS1/10S331J
R 207	RS1/10S0R0J
R 208	RS1/10S0R0J
R 209	RS1/10S561J
R 210	RS1/10S561J
R 211	RS1/10S223J
R 212	RS1/10S223J
R 213	RS1/10S0R0J
R 214	RS1/10S0R0J
R 215	RS1/10S561J
R 216	RS1/10S561J
R 217	RS1/10S223J
R 218	RS1/10S223J
R 219	RS1/10S0R0J
R 220	RS1/10S0R0J
R 221	RS1/10S561J
R 222	RS1/10S561J
R 223	RS1/10S223J
R 224	RS1/10S223J
R 251	RS1/10S103J
R 316	RN1/10SE4702D
R 317	RN1/10SE4702D
R 401	See Contrast Table
R 402	RS1/10S102J
R 403	RS1/10S103J
R 404	RS1/10S680J
R 405	See Contrast Table
R 406	See Contrast Table
R 407	RS1/10S103J
R 408	See Contrast Table
R 409	RS1/10S392J
R 410	RS1/16S392J
R 411	See Contrast Table
R 412	See Contrast Table
R 413	RS1/10S102J
R 414	See Contrast Table
R 415	See Contrast Table
R 416	See Contrast Table
R 417	See Contrast Table
R 418	See Contrast Table
R 419	RS1/10S222J
R 420	RS1/16S222J
R 421	RS1/16S102J
R 422	See Contrast Table
R 423	RS1/10S0R0J
R 424	RS1/16S222J
R 426	RS1/16S222J
R 427	RS1/16S562J
R 428	See Contrast Table
R 429	RS1/16S473J

=====Circuit Symbol & No.	===Part Name	Part No.
R 430		RS1/16S393J
R 431		See Contrast Table
R 432		RS1/10S473J
R 433		See Contrast Table
R 434		See Contrast Table
R 435		See Contrast Table
R 436		See Contrast Table
R 437		See Contrast Table
R 438		See Contrast Table
R 439		See Contrast Table
R 440		See Contrast Table
R 441		See Contrast Table
R 442		RS1/16S224J
R 443		See Contrast Table
R 501		See Contrast Table
R 503		See Contrast Table
R 504		See Contrast Table
R 506		See Contrast Table
R 507		See Contrast Table
R 508		See Contrast Table
R 509		See Contrast Table
R 510		See Contrast Table
R 511		See Contrast Table
R 512		See Contrast Table
R 513		See Contrast Table
R 514		See Contrast Table
R 515		See Contrast Table
R 516		See Contrast Table
R 517		See Contrast Table
R 601		RS1/16S472J
R 602		RS1/16S473J
R 603		RS1/10S473J
R 606		RS1/16S473J
R 607		RS1/16S473J
R 608		RS1/16S473J
R 609		RS1/16S473J
R 610		RS1/16S473J
R 611		RA4C221J
R 615		RS1/16S221J
R 616		RS1/16S473J
R 617		RS1/16S473J
R 618		RS1/16S473J
R 619		RS1/16S681J
R 620		See Contrast Table
R 621		See Contrast Table
R 622		See Contrast Table
R 623		RS1/16S473J
R 624		RS1/16S393J
R 625		RS1/16S473J
R 626		RA4C681J
R 627		RS1/16S102J
R 628		RS1/16S473J
R 629		RS1/16S473J
R 630		RS1/16S473J
R 632		RS1/16S102J
R 634		RS1/16S124J
R 635		RS1/16S473J
R 636		RS1/10S472J
R 637		RS1/10S102J
R 638		RS1/10S103J
R 639		RS1/10S103J
R 640		RS1/10S221J
R 641		RS1/10S101J
R 642		RS1/16S223J
R 643		RS1/16S473J

=====Circuit Symbol & No.	===Part Name	Part No.
R 644		RS1/16S223J
R 645		RS1/16S473J
R 646		RS1/10S472J
R 647		RS1/10S473J
R 648		RS1/10S103J
R 649		RS1/16S473J
R 650		RS1/16S472J
R 651		RS1/16S102J
R 652		RS1/16S472J
R 653		RS1/8S153J
R 654		RS1/10S102J
R 655		RS1/16S152J
R 656		RS1/16S152J
R 657		RS1/16S473J
R 658		RS1/16S272J
R 659		RS1/16S223J
R 660		RS1/16S473J
R 661		RS1/16S272J
R 662		RS1/16S223J
R 663		RS1/16S103J
R 664		RS1/16S473J
R 665		RS1/16S272J
R 666		RS1/16S223J
R 667		RS1/16S223J
R 668		RS1/16S223J
R 669		RS1/16S103J
R 672		RS1/10S103J
R 673		RS1/10S103J
R 676		RS1/10S103J
R 677		RS1/10S102J
R 678		RS1/16S102J
R 679		RS1/16S102J
R 680		RS1/16S102J
R 681		RS1/16S102J
R 682		RS1/16S102J
R 683		RS1/16S473J
R 684		RS1/16S101J
R 685		RS1/16S102J
R 686		RS1/16S102J
R 687		RS1/4S0R0J
R 688		RS1/16S223J
R 751		RA3C473J
R 752		RA3C473J
R 753		RS1/10S243J
R 754		RS1/10S243J
R 755		RS1/10S473J
R 756		RS1/10S473J
R 757		RA3C222J
R 758		RA4C222J
R 759		RA4C222J
R 760		RA4C681J
R 761		RS1/10S0R0J
R 802		RS1/8S472J
R 804		RS1/8S222J
R 805		RS1/8S222J
R 806		RS1/8S222J
R 807		RS1/16S103J
R 808		RS1/8S222J
R 809		RS2PMF330J
R 810		RS1/10S472J
R 811		RS1/10S1R0J
R 812		RS1/10S104J
R 813		RS1/10S222J
R 814		RS1/4S152J
R 820		RS1/4S152J

=====Circuit Symbol & No.===Part Name			Part No.
R	821		RS1/10S103J
R	822		RS1/10S224J
R	823		RS1/10S222J
R	824		RS1/10S104J
R	901		RS1/10S101J
R	902		RS1/10S152J
R	903		RS1/10S752J
R	904		RS1/16S472J
R	905		RS1/16S102J
R	906		RS1/16S102J
R	907		RS1/10S472J
R	908		RS1/4S152J
R	951		RS1/4S561J
R	952		RS1/10S102J
R	953		RS1/10S102J
R	954		RS1/10S152J
CAPACITORS			
C	101		CEV2R2M50
C	102		CEV2R2M50
C	103		CCSQCH101J50
C	104		CCSQCH101J50
C	105		CCSQCH220J50
C	106		CCSQCH220J50
C	107		CEJA100M16
C	108		CEJA100M16
C	111		CEJA4R7M35
C	112		CEJA4R7M35
C	113		CCSQCH101J50
C	114		CCSQCH101J50
C	117		CKSQYB104K25
C	118		CEJA470M6R3
C	119		CEJA220M10
C	120		CEJA101M10
C	121		CEJA330M10
C	122		CKSQYB473K50
C	123		CEJA101M10
C	124		CKSQYB473K50
C	127		CCSQCH101J50
C	128		CCSQCH101J50
C	131		CCSQCH101J50
C	135		CKSQYB104K25
C	136		CKSQYB102K50
C	171		CKSQYB471K50
C	172		CEJA101M10
C	173		CEJANP4R7M16
C	201		CKSQYB222K50
C	202		CKSQYB222K50
C	203		CKSQYB222K50
C	204		CKSQYB222K50
C	205		CKSQYB222K50
C	206		CKSQYB222K50
C	207		CEJA100M16
C	208		CEJA100M16
C	209		CKSQYB102K50
C	210		CKSQYB102K50
C	211		CEJA100M16
C	212		CEJA100M16
C	213		CKSQYB102K50
C	214		CKSQYB102K50
C	215		CEJA100M16
C	216		CEJA100M16
C	217		CKSQYB102K50

=====Circuit Symbol & No.===Part Name			Part No.
C	218		CKSQYB102K50
C	251		CEJAR22M50
C	252		CEJAR22M50
C	253		CEJAR22M50
C	254		CEJAR22M50
C	263	4700µF/16V	CCH1178
C	264		CKSQYB104K25
C	265		CEJA1R0M50
C	266		CEJA220M16
C	267		CEJA1R0M50
C	312		CEJANP100M10
C	401		CKSYB473K50
C	402		CKSQYB102K50
C	403		CKSQYB223K50
C	405		See Contrast Table
C	406		CKLSR473K16
C	407		CKSQYB103K50
C	408		See Contrast Table
C	409	4.7µF/16V	CCH1250
C	410		CKSQYB103K50
C	411		CCSQCH150J50
C	412		CCSQCH150J50
C	413		See Contrast Table
C	414		See Contrast Table
C	415		See Contrast Table
C	416		See Contrast Table
C	417		CKSRYB103K25
C	418		CKSQYB103K50
C	419		CEJA220M10
C	420		CKSQYB103K50
C	421		CKSQYB103K50
C	422		CKSQYB471K50
C	423		CKSQYB223K50
C	424		See Contrast Table
C	425		CKSRYB103K25
C	426		CKSRYB103K25
C	427		CCSRCH101J50
C	428		CEJA220M6R3
C	429		CKSQYB473K50
C	431		See Contrast Table
C	432		See Contrast Table
C	433		See Contrast Table
C	434		See Contrast Table
C	435		See Contrast Table
C	436		See Contrast Table
C	437		See Contrast Table
C	501		See Contrast Table
C	502		See Contrast Table
C	503		See Contrast Table
C	504		See Contrast Table
C	506		See Contrast Table
C	507		See Contrast Table
C	508		See Contrast Table
C	509		See Contrast Table
C	510		See Contrast Table
C	511		See Contrast Table
C	512		See Contrast Table
C	513		See Contrast Table
C	514		See Contrast Table
C	515		See Contrast Table
C	601		CKSQYB223K50
C	602		CEJA4R7M35
C	603		CCSQCH200J50
C	604		CCSQCH200J50
C	605		CKSRYB104K16

=====Circuit Symbol & No.	===Part Name	Part No.	=====Circuit Symbol & No.	===Part Name	Part No.
C 606		CCSRCH470J50	C 901	1800µF/16V	CCH1313
C 608		CEJA2R2M50	C 902		CKSRYB472K50
C 609		CKSRYB104K16	C 903		CEJA470M10
C 610		CEJA330M10	C 904		CKSRYB103K25
C 611		CKSQYB473K50	C 906		CEJA100M16
C 612		CKSQYB473K50	C 907		CEJA100M16
C 613		CKSQYB473K50	C 908		CKSQYB104K25
C 614		CKSQYB473K50	C 909		CEAS470M10
C 615		CEAL100M16	C 910		CEJA101M10
C 616		CKSRYB103K25	C 911	330µF/10V	CCH1181
C 617		CKSRYB103K25	C 912		CEAS470M10
C 618		CKSRYB103K25	C 913		CKSQYB102K50
C 619		CCSRCH330J50	C 914		CKSRYB102K50
C 620		CKSQYB473K50	C 915		CEJA1R0M50
C 622		CKSQYB472K50	C 951		CKSQYB103K50
C 751		CEJA100M16	C 952		CKSYB105K16
C 752		CEJA100M16	C 953		CEJA220M10
C 801		CCSRCH101J50	C 954		CKSQYB222K50
C 802		CCSQCH101J50	C 955		CKSRYB472K50
C 803		See Contrast Table	C 956		CEJA220M10

CONTRAST TABLE of TUNER AMP UNIT

KEH-P9700R/EW and KEH-P9750/ES have the same construction except for the following:

Symbol & Description	Part No. KEH-P9700R/EW	Part No. KEH-P9750/ES
Tuner Amp Unit	CWM5781	CWM5782
IC401	PM2007A	PM2006A
IC501	PMW001B	Not Used
IC502	TA75S393F	Not Used
IC601	PD4903A	PD4904A
L501	LAU101K	Not Used
D401	MA152K	MA152WK
D402	MA152K	Not Used
Q403,Q404	2SD1757K	Not Used
Q405	IMH3A	Not Used
Q406	DTA114EK	Not Used
Q407	2SC2412K	Not Used
Q501	2SC2412K	Not Used
VR501	CCP1129 22kΩ(B)	Not Used
X501	CSS1056 4.332MHz	Not Used
FM/AM Tuner Unit	CWE1416	CWE1485
DSP Unit	CWX2237	CWX2238
C405	CKSRYB103K50	Not Used
C408	CCH1250 4.7µF/16V	Not Used
C413	CKSQYB103K50	Not Used
C414	CEJA220M6R3	Not Used
C415,C424	Not Used	CKSQYB103K50
C416	Not Used	CEJA220M6R3
C422	CKSQYB471K50	Not Used
C431,C432	CKSQYB223K50	CKSQYB473K50
C433,C434	CEJA1R0M50	Not Used
C435	CKSRYB223K50	Not Used
C436	CEJAR47M50	Not Used
C437	Not Used	CKSQYB154K16
C501	CKSRYB223K25	Not Used
C502,C504,C507,C512	CKSQYB104K25	Not Used
C503	CKSQYB223K50	Not Used
C506	CKSRYB222K50	Not Used
C508	CKSYB105K16	Not Used
C509	CKSRYB104K16	Not Used

Symbol & Description	Part No. KEH-P9700R/EW	KEH-P9750/ES
C510	CKSQYB472K50	Not Used
C511	CEJA4R7M35	Not Used
C513,C514	CCSQCH220J50	Not Used
C515	CKSRYB103K25	Not Used
C803	CKSQYB104K25	CKSQYB104K16
R401	RS1/10S0R0J	RS1/10S152J
R405	RS1/16S222J	RS1/16S0R0J
R406	RS1/16S561J	RS1/16S182J
R408	RS1/10S152J	RS1/10S222J
R411	RS1/16S272J	RS1/16S102J
R412	RS1/16S472J	Not Used
R414	RS1/16S682J	RS1/16S472J
R415	RS1/10S682J	RS1/10S472J
R416	RS1/10S472J	RS1/10S152J
R417	RS1/10S222J	RS1/10S472J
R418,R422	RS1/10S0R0J	Not Used
R428	RS1/16S562J	Not Used
R431	RS1/10S105J	Not Used
R433,R434	RS1/10S272J	RS1/10S162J
R435,R436	Not Used	RS1/10S0R0J
R437,R438,R513,R514	RS1/16S222J	Not Used
R439,R440	RS1/16S223J	Not Used
R441-R443	RS1/16S224J	Not Used
R501	RS1/16S103J	Not Used
R503	RS1/10S562J	Not Used
R504	RS1/16S333J	Not Used
R506-R512	RS1/16S102J	Not Used
R515	RS1/10S684J	Not Used
R516	RS1/16S681J	Not Used
R517	RS1/16S562J	Not Used
R620-R622	Not Used	RS1/16S473J

ASL UNIT
Consists of
ASL PCB
MIC PCB

C D Unit Number : CWM5783
Unit Name : ASL Unit

MISCELLANEOUS

=====Circuit Symbol & No.===		Part Name	Part No.
IC	301	IC	NJM2068MD
IC	302	IC	NJM2068MD
IC	701	IC	CA0008AM
IC	702	IC	TA2050S
Q	301	Transistor	2SC2412K
Q	701	Transistor	2SA1162
Q	702	Transistor	DTC124EK
D	307	Diode	MA3043(M)
D	308	Diode	MA152K
L	701	Inductor	LCTB3R3K2125
S	601	Switch	CSH1048
VR	301	Semi-fixed 10kΩ(B)	CCP1073
MIC	301	Microphone	CPM1011

RESISTORS

=====Circuit Symbol & No.===		Part Name	Part No.
R	121		RS1/10S222J
R	122		RS1/10S222J
R	123		RS1/10S362J
R	124		RS1/10S362J
R	301		RS1/10S561J
R	302		RS1/10S222J
R	303		RS1/10S683J
R	304		RS1/10S103J
R	305		RS1/10S472J
R	306		RS1/10S471J
R	307		RS1/10S562J
R	308		RS1/10S682J
R	309		RS1/10S684J
R	310		RS1/10S472J
R	311		RS1/10S472J
R	312		RS1/10S472J
R	313		RS1/10S153J
R	314		RS1/10S153J
R	315		RS1/10S102J
R	605		RS1/10S473J
R	670		RS1/8S102J
R	671		RS1/8S102J
R	701		RS1/10S222J
R	702		RS1/10S620J
R	703		RS1/10S101J
R	704		RS1/10S101J
R	705		RS1/10S473J
R	706		RS1/10S473J
R	707		RS1/10S102J
R	708		RS1/10S102J
R	709		RS1/10S103J
R	710		RS1/10S332J
R	711		RS1/10S562J
R	712		RS1/10S472J
R	713		RS1/10S181J

=====Circuit Symbol & No.		===Part Name	Part No.
R	714		RS1/10S181J
R	715		RS1/10S223J
R	716		RS1/10S223J
R	717		RS1/10S102J
R	718		RS1/10S102J
		CAPACITORS	
C	109		CEJA4R7M35
C	110		CEJA4R7M35
C	301		CEAL330M10
C	302		CEAL330M10
C	303		CEJA470M10
C	304		CSZSR68M20
C	305		CEJA100M16
C	306		CEJA470M10
C	307		CEAL100M16
C	308		CEJAR68M50
C	309		CEJANP220M10
C	310		CKSQYB823K25
C	311		CEJANP100M16
C	320		CCSQCH101J50
C	701		CKSQYB104K25
C	702		CKSQYB104K25
C	703		CKSQYB102K50
C	704		CEJA100M16
C	705		CEJA1R0M50
C	706		CEJA1R0M50
C	707		CEJA1R0M50
C	708		CEJA1R0M50
C	709		CEJA100M16

E Unit Number : CWM5688(EW)
CWM5689(ES)
Unit Name : Keyboard Unit

		MISCELLANEOUS	
IC	1901	HIC	RS-140
IC	1902	IC	PD6237C
IC	1903	IC	SED1540F0A
IC	1904	IC	SED1526F0A
IC	1905	IC	SED1526F0A
Q	1901	Transistor(EW)	IMH10A
Q	1902	Transistor(EW)	IMH10A
Q	1903	Transistor(EW)	IMH10A
D	1901	Diode	MA153
D	1902	Diode	MA153
D	1903	Diode	MA153
D	1904	Diode	MA152WA
D	1905	LED(EW)	CL170PGCD
D	1905	LED(ES)	CL170SBX
D	1906	LED(EW)	CL170DCD
D	1907	LED	CL170PGCD
D	1909	LED	CL170PGCD
D	1910	LED(EW)	CL170PGCD
D	1910	LED(ES)	CL170SBX
D	1911	LED(EW)	CL170DCD
D	1912	LED	CL170PGCD
D	1913	LED	CL170PGCD
D	1914	LED	CL170PGCD
D	1915	LED(EW)	CL170DCD
D	1915	LED(ES)	CL170SBX
D	1917	LED	CL170PGCD
D	1918	LED	CL170PGCD
D	1919	LED(EW)	CL170DCD
D	1919	LED(ES)	CL170SBX
D	1920	LED	CL170PGCD
L	1901	Inductor	LCTA2R2J3225
L	1902	Inductor	LCTB2R2K2125
L	1903	Inductor	LCTB2R2K2125
L	1904	Inductor	LCTB2R2K2125
L	1905	Inductor	LCTA4R7J3225

=====Circuit Symbol & No.		===Part Name	Part No.
X	1901	Osillator 3.77MHz	CSS1427
S	1901	Switch	CSN1042
S	1902	Switch	CSG1117
S	1903	Switch	CSG1075
S	1904	Switch	CSG1117
S	1906	Switch	CSG1118
S	1907	Switch	CSG1075
S	1908	Switch	CSG1117
S	1909	Switch	CSG1117
S	1910	Switch	CSG1118
S	1911	Switch	CSG1108
S	1913	Switch	CSG1117
S	1914	Switch	CSG1118
S	1915	Switch	CSG1107
S	1916	Switch	CSG1117
VR	1901	Semi-fixed 220kΩ(B)	CCP1237
VR	1902	Semi-fixed 220kΩ(B)	CCP1237
EL	1901	EL	CEL1580
LCD	1901	LCD	CAW1471
		RESISTORS	
R	1901		RS1/8S222J
R	1902		RS1/8S222J
R	1903		RS1/8S222J
R	1904		RS1/10S121J
R	1905		RS1/10S473J
R	1906	(ES)	RS1/8S102J
R	1907		RS1/8S751J
R	1908		RS1/10S103J
R	1909	(ES)	RS1/10S0R0J
R	1910		RS1/8S751J
R	1911		RS1/8S751J
R	1912		RS1/8S102J
R	1913		RS1/10S103J
R	1914	(ES)	RS1/10S0R0J
R	1915	(EW)	RS1/10S0R0J
R	1916		RS1/8S751J
R	1917		RS1/4S471J
R	1918		RS1/10S103J
R	1919	(ES)	RS1/10S0R0J
R	1920	(EW)	RS1/10S0R0J
R	1922		RS1/10S103J
R	1923	(ES)	RS1/10S0R0J
R	1924	(ES)	RS1/10S0R0J
R	1927		RS1/10S473J
R	1928		RS1/10S473J
R	1929		RS1/10S473J
R	1930		RS1/10S473J
R	1931		RS1/16S470J
R	1932		RS1/16S470J
R	1935		RS1/10S473J
R	1936		RS1/10S473J
R	1937		RS1/10S103J
R	1938		RS1/10S473J
R	1939		RA4C101J
R	1940		RS1/10S103J
R	1941		RA4C101J
R	1942		RS1/10S103J
R	1943		RS1/10S473J
R	1944		RS1/10S473J
R	1945		RS1/10S473J
R	1946		RA3C102J
R	1947		RA3C102J
R	1948		RA3C102J
R	1950		RS1/10S624J
R	1951		RS1/10S754J
R	1952		RS1/10S624J
R	1953		RS1/10S754J
R	1954		RS1/10S471J
R	1955		RS1/10S471J
R	1956		RS1/10S471J

=====Circuit Symbol & No.		===Part Name	Part No.
R	1957		RS1/10S471J
R	1958		RS1/10S473J
R	1959		RS1/10S472J
R	1960		RS1/10S103J
R	1961		RS1/10S103J
R	1962		RS1/10S103J
R	1963	(ES)	RS1/10S0R0J
R	1964	(ES)	RS1/8S102J
R	1965		RS1/8S751J
R	1966		RS1/8S751J
R	1967		RS1/8S751J
R	1968		RS1/8S102J
R	1970		RS1/8S751J

CAPACITORS

C	1901		CSZSR100M6R3
C	1902	(ES)	CKSQYB104K50
C	1903	(ES)	CKSQYB104K50
C	1904	(ES)	CKSQYB104K50
C	1905	(ES)	CKSQYB104K50
C	1906		CKSQYB103K50
C	1907		CKSQYB103K50
C	1908		CKSQYB103K50
C	1909		CKSQYF105Z16
C	1910		CKSQYF105Z16
C	1911		CKSQYF105Z16
C	1912		CKSQYF105Z16
C	1913		CKSQYF105Z16
C	1914		CKSQYF105Z16
C	1915		CKSQYF105Z16
C	1916		CKSQYF105Z16
C	1917		CKSQYB103K50
C	1918		CSZS1R0M16
C	1919		CSZS1R0M16
C	1920		CSZS1R0M16
C	1921		CKSQYF105Z16
C	1922		CKSQYF105Z16
C	1923		CKSQYF105Z16
C	1924		CKSQYF105Z16
C	1925		CKSQYF105Z16
C	1926		CKSQYB103K50
C	1927		CSZS1R0M16
C	1928		CSZS1R0M16
C	1929		CSZS1R0M16
C	1934		CSZSR100M6R3
C	1935		CKSQYB104K16
C	1936		CSZSR100M6R3

F Unit Number : CWX2237(EW)
CWX2238(ES)
Unit Name : DSP Unit

MISCELLANEOUS

IC	3001	IC	PD5445A
IC	3101	IC	AK7712AVT
IC	3102	IC	TC9331F
IC	3103	IC(M5M51016BTP-70LL)	GGC1325
IC	3201	IC(EW)	AK4321VF
IC	3201	IC(ES)	PE2001AF
IC	3301	IC	PM0017AM
L	3001	Inductor	CTF1410
L	3002	Inductor	CTF1410
L	3003	Inductor	CTF1410
L	3004	Inductor	CTF1410
L	3101	Inductor	CTF1410
L	3102	Inductor	CTF1410
L	3103	Inductor	CTF1410
L	3104	Inductor	CTF1410

=====Circuit Symbol & No.		===Part Name	Part No.
L	3143	Inductor	CTF1420
L	3151	Inductor	CTF1410
L	3152	Inductor	CTF1410
L	3153	Inductor	CTF1410
L	3154	Inductor	CTF1410
L	3201	Inductor	CTF1410
L	3301	Inductor	CTF1410
L	3302	Inductor	CTF1410
L	3303	Inductor	CTF1410
L	3304	Inductor	CTF1410
L	3305	Inductor	CTF1410
L	3306	Inductor	CTF1410
X	3001	Osillator 10.0MHz	CSS1428
X	3101	Crystal Resonator 16.9344MHz	CSS1067
X	3102	Crystal Resonator 32.0MHz	CSS1360

RESISTORS

R	3001	RS1/16S102J
R	3002	RS1/16S102J
R	3003	RS1/16S102J
R	3004	RS1/16S681J
R	3005	RS1/16S681J
R	3006	RS1/16S681J
R	3007	RS1/16S681J
R	3008	RS1/16S681J
R	3011	RS1/16S102J
R	3012	RS1/16S102J
R	3015	RS1/16S473J
R	3016	RA3C102J
R	3018	RS1/16S102J
R	3019	RS1/16S102J
R	3020	RS1/16S102J
R	3021	RS1/16S102J
R	3022	RS1/16S102J
R	3023	RS1/16S102J
R	3024	RS1/16S102J
R	3025	RS1/16S102J
R	3026	RS1/16S102J
R	3027	RS1/16S102J
R	3028	RS1/16S102J
R	3030	RS1/16S102J
R	3031	RS1/16S102J
R	3032	RS1/16S102J
R	3033	RS1/16S473J
R	3034	RS1/16S473J
R	3035	RS1/16S473J
R	3036	RS1/16S105J
R	3037	RS1/16S102J
R	3101	RS1/16S473J
R	3102	RS1/16S473J
R	3103	RA4C102J
R	3104	RA4C102J
R	3105	RA4C102J
R	3106	RA4C102J
R	3108	RA4C102J
R	3109	RA4C102J
R	3110	RA4C102J
R	3111	RA4C102J
R	3112	RS1/16S105J
R	3113	RS1/16S105J
R	3114	RS1/16S102J
R	3115	RS1/16S102J
R	3116	RS1/16S473J
R	3131	RS1/16S0R0J
R	3132	RS1/16S0R0J
R	3133	RS1/16S0R0J
R	3134	RS1/16S0R0J
R	3141	RA3C103J
R	3151	RSK1/16S151J
R	3152	RSK1/16S151J
R	3153	RSK1/16S151J
R	3154	RSK1/16S151J

=====Circuit Symbol & No.	Part Name	Part No.
R 3155		RSK1/16S151J
R 3156		RSK1/16S151J
R 3160		RS1/10S0R0J
CAPACITORS		
C 3002		CKSYB106K6R3
C 3102		CKSQYB103K50
C 3104		CCSRCH100D50
C 3105		CCSRCH100D50
C 3107		CKSYB106K6R3
C 3108		CKSQYB104K16
C 3109		CSZSR470M6R3
C 3110		CKSQYB104K16
C 3111		CKSYB106K6R3
C 3112		CKSQYB104K16
C 3113		CKSQYB103K50
C 3114		CKSYB106K6R3
C 3115		CCSQCH100J50
C 3116		CCSQCH100J50
C 3117		CKSYB106K6R3
C 3119		CKSYB106K6R3
C 3120		CKSQYB104K16
C 3151		CKLSRB152K50
C 3152		CKLSRB152K50
C 3159		CKLSRR103K16
C 3160		CKLSRR103K16
C 3161		CKLSRR103K16
C 3162		CKLSRR103K16
C 3163		CKLSRR103K16
C 3164		CKLSRR103K16
C 3201		CKSYB106K6R3
C 3203		CKSQYB104K16
C 3205		CSZSR470M6R3
C 3206		CKSQYB104K16
C 3207		CKSYB106K6R3
C 3301		CKSYB475K10
C 3302		CKSYB475K10
C 3303		CKSYB475K10
C 3304		CKSYB475K10
C 3305		CKSYB475K10
C 3306		CKSYB475K10
C 3307		CKSQYB104K16
C 3308		CKSYB106K6R3
C 3309		CKSQYB104K16

G Unit Number : CWM5684
Unit Name : MIC Jack Unit

D	4601	LED	BR4361F

H Unit Number : EWM1020
Unit Name : Deck Unit

MISCELLANEOUS

IC	251	IC	HA12163
IC	351	IC	PA2020A
Q	271	Transistor	2SC4116
Q	351	Transistor	2SB1260
Q	352	Transistor	2SC4102
D	351	Diode	MA141K
VR	301	Semi-fixed 33kΩ(B)	CCP1130
VR	302	Semi-fixed 33kΩ(B)	CCP1130

=====Circuit Symbol & No.	Part Name	Part No.
RESISTORS		
R 251		RS1/16S333J
R 252		RS1/16S333J
R 253		RS1/16S333J
R 254		RS1/16S333J
R 255		RS1/16S181J
R 256		RS1/16S181J
R 257		RS1/16S183J
R 258		RS1/16S183J
R 259		RS1/16S133J
R 260		RS1/16S133J
R 261		RS1/16S274J
R 262		RS1/16S274J
R 271		RS1/16S183J
R 272		RS1/8S223J
R 273		RS1/8S223J
R 274		RS1/8S103J
R 275		RS1/16S473J
R 276		RS1/16S104J
R 277		RS1/16S224J
R 278		RS1/16S104J
R 281		RS1/8S0R0J
R 282		RS1/8S0R0J
R 283		RS1/8S0R0J
R 284		RS1/8S0R0J
R 285		RS1/16S0R0J
R 286		RS1/16S0R0J
R 288		RS1/16S0R0J
R 289		RS1/16S0R0J
R 322		RS1/8S223J
R 351		RS1/16S102J
R 352		RS1/16S102J
R 353		RS1/16S102J
R 354		RS1/16S102J
R 355		RS1/10S274J
R 356		RS1/10S202J
R 357		RS1/10S472J
R 358		RS1/10S103J
R 359		RS1/10S103J
R 360		RS1/10S102J
R 361		RS1/10S622J
R 373		RS1/8S0R0J
R 374		RS1/8S0R0J
R 375		RS1/8S0R0J
R 401		RS1/16S273J
R 402		RS1/16S223J
R 403		RS1/16S274J
R 404		RS1/16S823J
R 405		RS1/16S274J
CAPACITORS		
C 251		CKSRYB331K50
C 252		CKSRYB331K50
C 253		CKSRYB331K50
C 254		CKSRYB331K50
C 255		CKSRYB103K25
C 256		CKSRYB103K25
C 271		CEV1R0M50
C 272		CKSQYB104K16
C 301		CKSYB474K16
C 302		CKSYB474K16

=====Circuit Symbol & No.===		Part Name	Part No.
C	309		CKSQYB104K16
C	310		CKSQYB104K16
C	351		CKSYB224K25
C	352		CKSQYB392K50
C	353		CKSQYB103K50
C	354		CKSQYB103K50
C	355		CKSYB104K50
C	356		CKSQYB103K50
C	401		CKSRYB182K50
C	402		CKSRYB822K25
C	403		CKSRYB333K16
C	404		CKSRYB471K50

I Unit Number :
Unit Name : PCB Unit

S	1	Switch (Load)	ESG1004
S	2	Switch (70µS)	ESG1004
EGN	1	Photo-Interrupter	EGN1005
R	1	Resistor	RD1/4PM181J

J Unit Number :
Unit Name : Reel PCB

EGN	2	Photo-Interrupter	EGN1006
EGN	3	Photo-Interrupter	EGN1006

K Unit Number :
Unit Name : Switch PCB

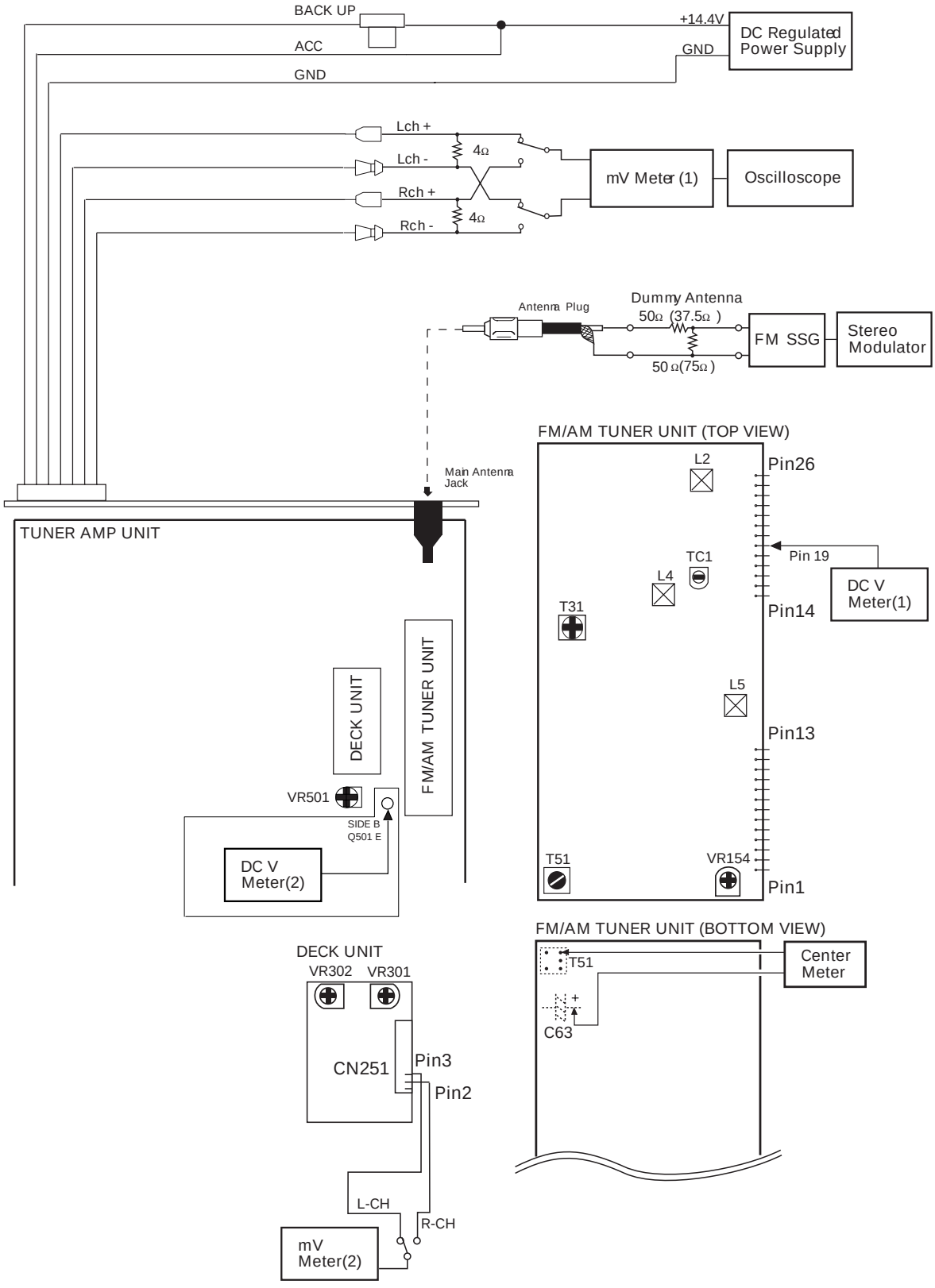
S	951	Switch	CSN1012
S	952	Switch	CSN1022

Miscellaneous Parts List

M	1	Motor Unit (Main)	EXA1454
M	2	Motor Unit (Sub)	EXA1485
HD	1	Head Assy	EXA1527
M	951	Motor	CXM1085

6. ADJUSTMENT

● Connection Diagram



Modulation M:MONO MOD., 400Hz 30%(22.5kHz Dev.)
S:STEREO MOD., 1kHz, L or R=30%(20.25kHz+7.5kHz Dev.)

NOTE:Before proceeding to further adjustments after switching power ON, let the tuner run for ten minutes to allow the circuits to stabilize.

FM ADJUSTMENT(EW model)

	No.	FM SSG		Displayed	Adjustment	Adjustment Method
		Frequency(MHz)	Level(dBf)	Frequency(MHz)	Point	(Switch Position)
TUN Volt	1	•••••	•••••	108.0	L5	DC V Meter(1) : 6V
IF	1	98.1 M	60	98.1	T51	Center Meter : 0
ANT Coil	1	98.1 M	5	98.1	L2	mV Meter(1) : Maximum
RF Coil	1	98.1 M	5	98.1	L4	mV Meter(1) : Maximum
Image	1	129.3 M	60—80	107.9	TC1	mV Meter(1) : Minimum
IFT	1	98.1 M	5	98.1	T31	mV Meter(1) : Maximum (STEREO MODE)
ARC	1	98.1 S	39	98.1	VR154	mV Meter(1) : Separation 5dB (STEREO MODE)

FM ADJUSTMENT(ES model)

	No.	FM SSG		Displayed	Adjustment	Adjustment Method
		Frequency(MHz)	Level(dBf)	Frequency(MHz)	Point	(Switch Position)
TUN Volt	1	•••••	•••••	108.0	L5	DC V Meter(1) : 6V
IF	2	98.1 M	60	98.1	T51	Center Meter : 0
ANT Coil	3	98.1 M	5	98.1	L2	mV Meter(1) : Maximum
RF Coil	4	98.1 M	5	98.1	L4	mV Meter(1) : Maximum
IFT	5	98.1 M	5	98.1	T31	mV Meter(1) : Maximum (STEREO MODE)
ARC	6	98.1 S	40	98.1	VR154	mV Meter(1) : Separation 5dB (STEREO MODE)

RDS SL ADJUSTMENT

	No.	FM SSG		Displayed	Adjustment	Adjustment Method
		Frequency(MHz)	Level(dBf)	Frequency(MHz)	Point	(Switch Position)
	1	106.1 M	52	106.1	VR501	DC V Meter(2) : 2.25V±0.05V

DOLBY B NR ADJUSTMENT

No.	Test Tape	Adjustment Point	Adjustment Method (Switch Position)
1	NCT-150 (400Hz,200nwb/m)	VR301(Lch),VR302(Rch)	mV Meter(2) : –8.24dBs±1.0dB (DOLBY NR Switch : OFF)

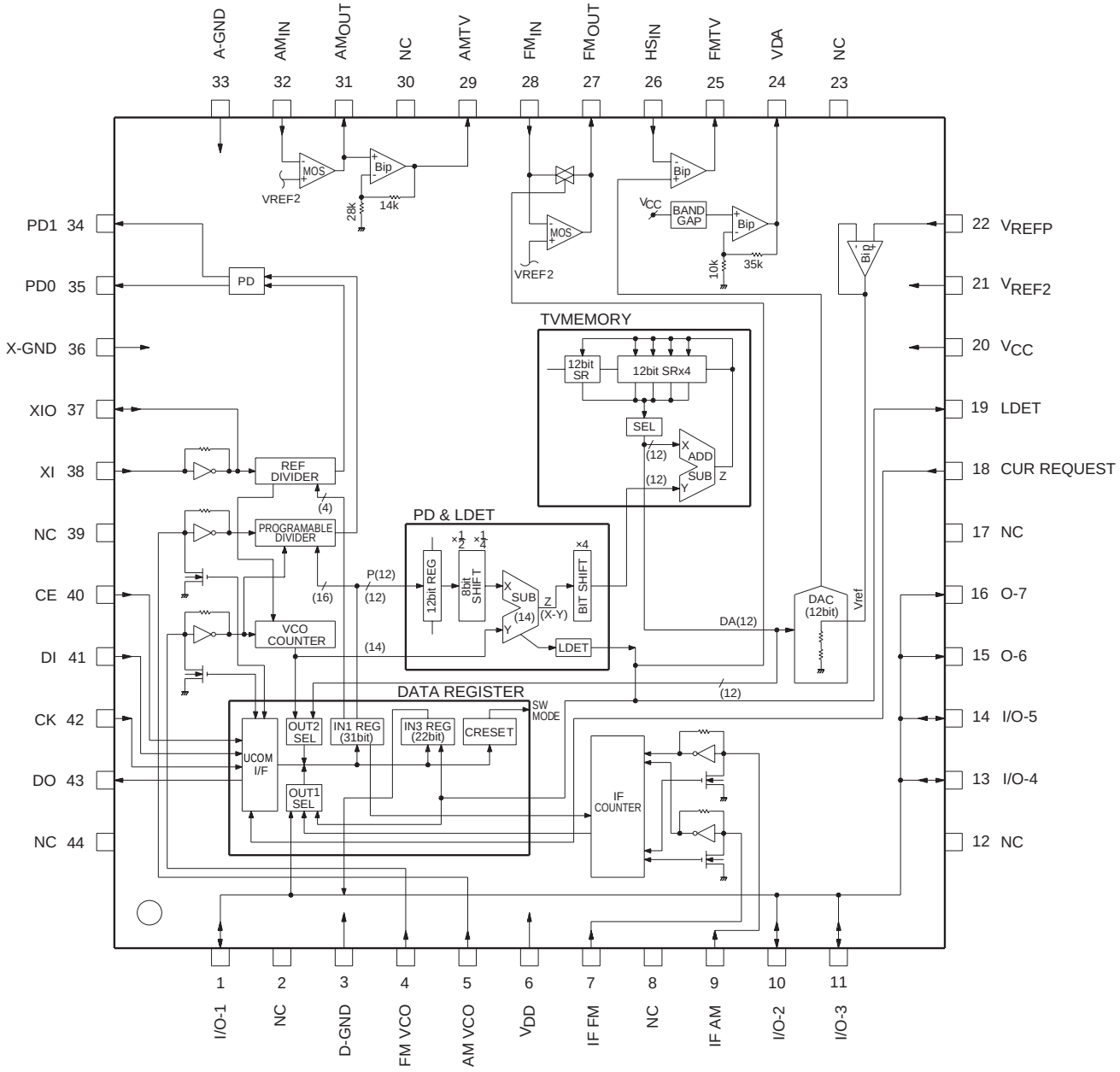
7. GENERAL INFORMATION

7.1 PARTS

7.1.1 IC

PM2007A	AK7712AVT
PD4903A	GGC1325(M5M51016BTP-70LL)
PD6237C	
SED1540F0A	
SED1526F0A	
PD5445C	
PM0017AM	
AK4321VF	

PM2007A

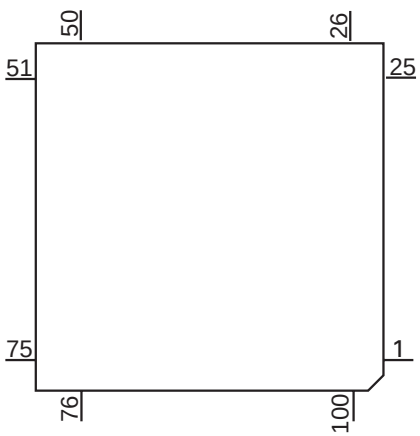


● Pin Functions (PD4903A)

Pin No.	Pin Name	I/O	Function and Operation
1	$\overline{\text{ISENS}}$	I	Illumination sense input
2	SYSPW	O	System power supply control output
3	LCDPW	O	CD power control
4	DIM	O	Dimmer select output
5	DRELAY	O	External relay output
6	DRSENS	I	Door open/close sense input
7	DRSYS	O	Door system select output
8	DLSENS	I	Door lock sense input
9	NC		Not used
10	$\overline{\text{MOSENS}}$	I	Motion/window damage sensor input
11	$\overline{\text{RESET}}$	I	Reset input
12	XT2		Not used
13	XT1		Connect to GND
14	VSS		GND
15	X2		Crystal oscillator connection pin
16	X1		Crystal oscillator connection pin
17	REGOFF		VDD
18	REGC		VDD
19	VDD		Power supply
20	ADSEL	I	Serial data audio source select input
21	ILMPW	O	Illumination power supply control output
22	$\overline{\text{MUTE}}$	O	Mute output
23	$\overline{\text{TMUTE}}$	O	Tuner mute output
24	SOR0	O	Source select output
25	SOR1	O	Source select output
26	SOR2	O	Source select output
27	SOR3	O	Source select output
28	FLPCLS	O	Flap motor close output
29	FLPOPN	O	Flap motor open output
30	$\overline{\text{FOPNSW}}$	I	Flap motor open switch input
31	$\overline{\text{FCLSSW}}$	I	Flap motor close switch put
32	FLPPW	O	Flap motor driver power ON/OFF output
33	$\overline{\text{MCSENS}}$	I	Microphone sennse input
34	$\overline{\text{CASENS}}$	I	Half load sense input
35	$\overline{\text{STD}}$/PRO	I	STD/PRO select input
36,37	NC		Not used
38	$\overline{\text{DLED}}$	O	Alarm LED output
39	$\overline{\text{PSENSE}}$	I	Grille button sense input
40	VSS		GND
41	VDD		Power supply
42	SWVDD	O	Grille power supply control output
43	$\overline{\text{DRST}}$	O	Reset output
44	$\overline{\text{MDSENS}}$	I	Modulation detect input
45	$\overline{\text{SK}}$	I	SK signal input
46	$\overline{\text{RDSLK}}$	I	RDS LK signal input
47	RDT	I	FROM data input
48	MSIN	I	MS sense
49	DIRO	O	Head F/R select output
50	PLAY	O	MS gain select output
51	$\overline{\text{MTLSW}}$	I	Metal sense input
52	BC	O	Dolby B/C select output
53	NR	O	NR output
54	$\overline{\text{LOADSW}}$	I	Tape loading input
55	POS	I	Position sense input
56	RES	I	Reverse end sense input
57	NES	I	Forward end sense input
58	SC2	O	Sub motor control output

Pin No.	Pin Name	I/O	Function and Operation
59	SC1	O	Sub motor control output
60	CM	O	Capstan motor control output
61	$\overline{\text{STBY}}$	O	Stand-by output
62	PCL	O	Clock adjustment output
63	$\overline{\text{BRXEN}}$	I/O	P-BUS reception enable input/output
64	$\overline{\text{BSRQ}}$	O	P-BUS service request output pin
65	$\overline{\text{BSCK}}$	I/O	P-BUS serial clock input/output
66	BSI	I	P–BUS serial data input
67	BSO	O	P-BUS output
68	$\overline{\text{BRST}}$	O	P–BUS reset output
69	$\overline{\text{DSENS}}$	I	Grille detach sense
70	$\overline{\text{ST}}$	I	FM stereo input
71	$\overline{\text{ADPW}}$	O	Control output for analog input reference power
72	DALMON	O	DFS alarm output
73	TEST	I	Test terminal
74	SL	I	SD level input from tuner
75	CL	I	Synchronizing signal input of display data latch
76	NL	I	Noise level input
77	SD	I	SD input
78	TESTIN	I	Test program mode input
79	IPPW	O	Power supply control output for IP BUS interface IC
80	ASENBO	O	Slave power supply control output
81	$\overline{\text{CURRQ}}$	O	Tuner voltage FIX output
82,83	VDD		Power supply
84	GND		GND
85	RX	I	IP BUS data input
86	TX	O	Digital audio interface data output terminal
87	GND		GND
88	$\overline{\text{LDET}}$	I	PLL lock sense input
89	RCK	I	FROM clock input
90	RDS57K	I	57kHzBP-OUT sense input
91	TELIN	I	Telephone mute input
92	$\overline{\text{ASENS}}$	I	ACC power sense input
93	$\overline{\text{BSENS}}$	I	Back up power sense input
94	TUNPDI	I	PLL IC data input
95	KEYDT	I	Display data input
96	DPDT	O	Display data input
97	TUNPCK	O	PLL IC clock
98	TUNPDO	O	PLL IC data output
99	TUNPCE	O	PLL IC chip enable
100	PEE	O	Beep tone output

*PD4903A

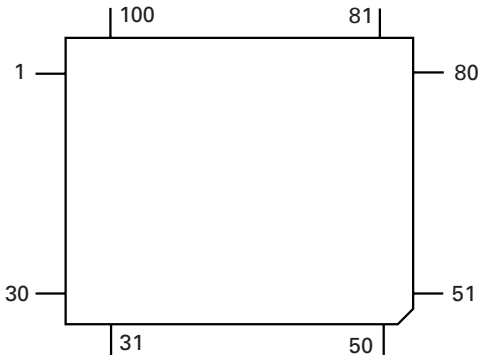


IC's marked by* are MOS type.
Be careful in handling them because they are very liable to be damaged by electrostatic induction.

● Pin Functions (PD6237C)

Pin No.	Pin Name	I/O	Format	Function and Operation
1-9	NC	O	C	Not used
10	RDX	O	C	Address read strobe output
11	VSS	O	C	Digital GND
12	WRX	O	C	Address write strobe output
13-18	NC	O	C	Not used
19	KYDT	O	C	Key data for system micro-computer
20	DPDT	I		Display data from system micro-computer
21	SCDCLK	I		Test program clock
22	DATAOT	O	C	Test program data
23	Vcc			Digital GND
24	DATAIN	I		Test program data
25,26	NC	O	C	Not used
27	C		C	Reference voltage
28-33	NC	O		Not used
34	AVcc			Analog power supply
35,36	NC			Not used
37	AVSS			Analog GND
38	ILM1	O	C	Illumination control output 1
39	ILM2	O	C	Illumination control output 2
40,41	NC	O	C	Not used
42	GND			Digital GND
43-48	NC	O	C	Not used
49	MD0	I		mode pin 0 (PULL-UP)
50	MD1	I		mode pin 1 (PULL-UP)
51	MD2	I		mode pin 2 (PULL-DOWN)
52	HSTX	I		Hardware standby input (PULL-UP)
53	REMIN	I		Remote control pulse input
54-58	NC	O	C	Not used
59	KST0	O	C	Key scan output
60	KST1	O	C	Key scan output
61	KST2	O	C	Key scan output
62	KST3	O	C	Key scan output
63,64	NC	O	C	Not used
65	RES1	O	C	SED 1450 Reset output
66	RES2	O	C	SED 1526 Reset output
67	KDT0	I	C	Key data input
68	KDT1	I	C	Key data input
69	KDT2	I	C	Key data input
70	KDT3	I	C	Key data input
71-73	NC	O	C	Not used
74	OSC4K	O	C	SED 1540 Clock output
75,76	NC	O	C	Not used
77	NC	I		Not used
78	CS1	O	C	SED 1526 Chip select output
79	CS2	O	C	SED 1526 Chip select output
80	CS3	O	C	SED 1540 Chip select output
81	VSS			Digital GND
82	X0			Oscillator circuit
83	X1			Oscillator circuit
84	Vcc			Digital power supply
85	AD00	I/O	C	External data bus input/output
86	AD01	I/O	C	External data bus input/output
87	AD02	I/O	C	External data bus input/output
88	AD03	I/O	C	External data bus input/output
89	AD04	I/O	C	External data bus input/output
90	AD05	I/O	C	External data bus input/output
91	AD06	I/O	C	External data bus input/output
92	AD07	I/O	C	External data bus input/output
93	A0	O	C	External address output
94-100	NC	O	C	Not used

*PD6237C

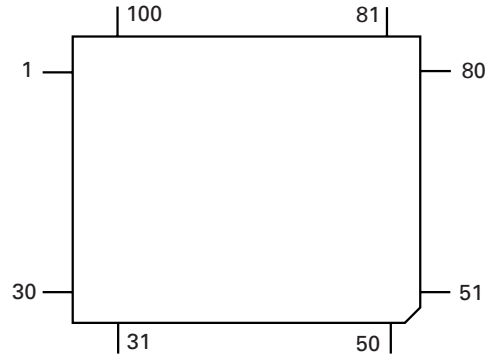


Format	Meaning
C	C MOS

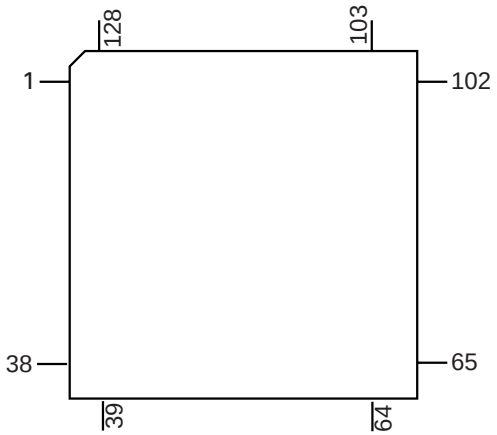
● Pin Functions (SED1540F0A)

Pin No.	Pin Name	I/O	Function and Operation
1-72	SEG71-0	O	Output for driving segment of LC
73	A0	I	Normally the lowest bit in the address bus of MPU is connected to distinguish between data and command.
74,75	OSC1,2		Terminal to connect resistor for internal oscillation
76	E($\overline{RD}$)	I	Enable clock input terminal of 68-system MPU Terminal to connect RD signal of 80-system MPU. While this signal is set to "L," data bus of SED1540 will be output.
77	R/$\overline{W}$($\overline{WR}$)	I	Input terminal of read/write control signal Terminal to connect write signal of 80-system MPU
78	VSS		0V connect to system GND
79-86	DB0-7		8-bit duplex data bus to be connected to a data bus of 8-bit or 16-bit standard MPU
87	VDD		Connect to +5V power supply VDD
88	$\overline{RES}$		Can be set to initial setting by setting RES to "L" when using 68-system MPU, or by setting RES to "H" when using 80-system MPU.
89	FR	I/O	Input/output terminal of LC alternating signal
90	V3		Multilevel power supply for driving LC
91	$\overline{CS}$	I	Chip select signal. Normally, signal obtained by decoding address bus signal is input.
92	NC		Not used
93	M/S		Terminal to select between master and slave operation to SED1540. Connect to VDD or VSS.
94,95	V2,1		Multilevel power supply for driving LC
96-99	COM0-3	O	Output for LC common (low) driving
100	SEG72	I/O	Output for driving segment of LC

SED1540F0A



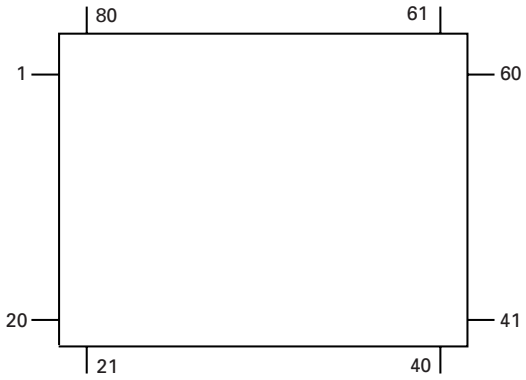
SED1526F0A



● Pin Functions (SED1526F0A)

Pin No.	Pin Name	I/O	Function and Operation
1-5	V1-V5		Multilevel power supply for driving LCD
6	VR	I	Voltage adjustment
7	VDD		+5V power supply
8	VOUT	O	Ascending voltage output
9	CAP2-	O	Ascending voltage capacitor connection
10	CAP2+	O	Not used
11	CAP1-	O	Ascending voltage capacitor connection
12	CAP2+	O	Ascending voltage capacitor connection
13	VSS		GND
14	M/S	I	IC master/slave operation select
15	SR2	I	MPU interface select, pararel/serial data inpur select and reset input
16	SR1	I	MPU interface select, pararel/serial data inpur select and reset input
17	$\overline{WR}$	I	MPU WR signal connection
18	$\overline{RD}$	I	MPU RD signal connection
19	CS2	I	Chip select signal
20	CS1	I	Chip select signal
21	A0	I	Data/command discrimination
22	FR	O	Not used
23	CL	O	Not used
24-31	D0-D7	I/O	Serial data bus
32-39	COM0-7	O	Output for LCD common driving
40-48	NC		Not used
49-110	SEG0-61	O	Output for driving segment of LCD
111-128	NC		Not used

*PD5445C



Format	Meaning
C	C MOS

● Pin Functions (PD5445C)

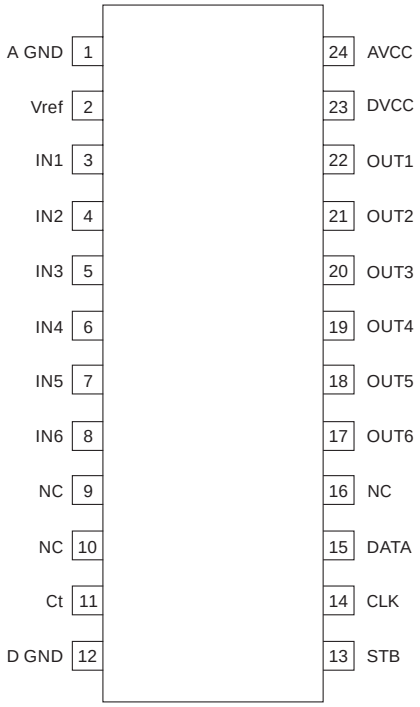
Pin No.	Pin Name	I/O	Format	Function and Operation
1	SPCK	I	C	Connect to GND
2	NC	O	C	Not used
3	VST	O	C	Electronic volume strobe output
4	VDT	O	C	Electronic volume data output
5	VCK	O	C	Electronic volume clock output
6	CNVss	I		Connect to Vss
7	MCKRQ	I	C	CD unit MCK request input
8	NC	O	C	Not used
9	$\overline{\text{RESET}}$	I		Micro-computer hard reset input
10	Xout	O		System clock output
11	Vss	I		GND
12	Xin	I		System clock input
13	Vcc	I		Micro-computer power supply 5V
14	nmi	I	C	Connect to Vcc
15	BMUTEIN	I	C	CD unit LR clock supply data
16	SPRQ	I	C	Connect to GND
17	$\overline{\text{BRST}}$	I	C	P-Bus reset input
18	ADTEST	I	C	A.EQ test mode start
19	MICSNS	I	C	A.EQ mic connection data
20	ADSEL	O	C	Signal/select input of A.EQ mic
21	MUTERQ	O	C	Hard mute output
22,23	NC	O	C	Not used
24	DSPOUT	O	C	DSP serial data output
25	DSPIN	I	C	DSP serial data input
26	DSPCK	O	C	DSP serial clock output
27	NC	O	C	Not used
28	BSO	O	C	P-BUS data output
29	BSI	I	C	P-BUS data input
30	BSCK	I/O	C	P-BUS serial clock input/output
31	NC	O	C	Not used
32	$\overline{\text{BSRQ}}$	I/O	C	Service request input
33	$\overline{\text{BRXEN}}$	I/O	C	Reception enable input
34,35	DSPERR1	I	C	Connect to GND
36	DZF1	I	C	Front digital 0 data input
37	DZF0	I	C	Rear digital 0 data input
38	DZF2	I	C	Sub woofer digital 0 data input
39	$\overline{\text{TESTIN}}$	I	C	test program start/enable
40	DSPPW	O	C	DSP power supply switching
41	NGO	O	C	Noise gate ON/OFF
42-48	NC	O	C	Not used
49	FMUTE	O	C	Not used
50	SWMUTE	O	C	Not used
51	VOICE	I	C	Connect to GND
52-58	NC	O	C	Not used
59	IFHIZ	I	C	DSP micro-computer port Hi2 set (test mode port)
60	$\overline{\text{DSPRST}}$	O	C	TC9331 hard reset
61	$\overline{\text{PD}}$	O	C	AK7712 power down
62	$\overline{\text{AKRST}}$	O	C	AK7712 reset
63	$\overline{\text{DSPCS2}}$	O	C	AK7712 chip select
64	$\overline{\text{DSPCS1}}$	O	C	TC9331 chip select
65	$\overline{\text{DSPRQ}}$	O	C	AK7712 data output request
66	DSPCd	O	C	TC9331 command/data
67	DSPRDY	I	C	AK7712 data ready
68	$\overline{\text{DSPACK}}$	I	C	DSP data write ready/ACK
69	SMODE	O	C	Ak7712 master/slave
70	EMPIN	I	C	CD unit emphasis data input
71	$\overline{\text{EMPOUT}}$	O	C	DAC emphasis output
72	LRCKK	O	C	LRCK/BCLK select

Pin No.	Pin Name	I/O	Format	Function and Operation
73	SDATAK	O	C	Audio data select:LRCKK inverted gate
74	NOISE	I		ASL noise input
75	AVss	I		Connect Vss
76	MCKOUT	O	C	CD MCLK gate control
77	Vref	I		AD select reference voltage input
78	AVcc	I		Connect to Vcc
79	MO/ST	I	C	Connect to GND
80	SPDT	O	C	Not used

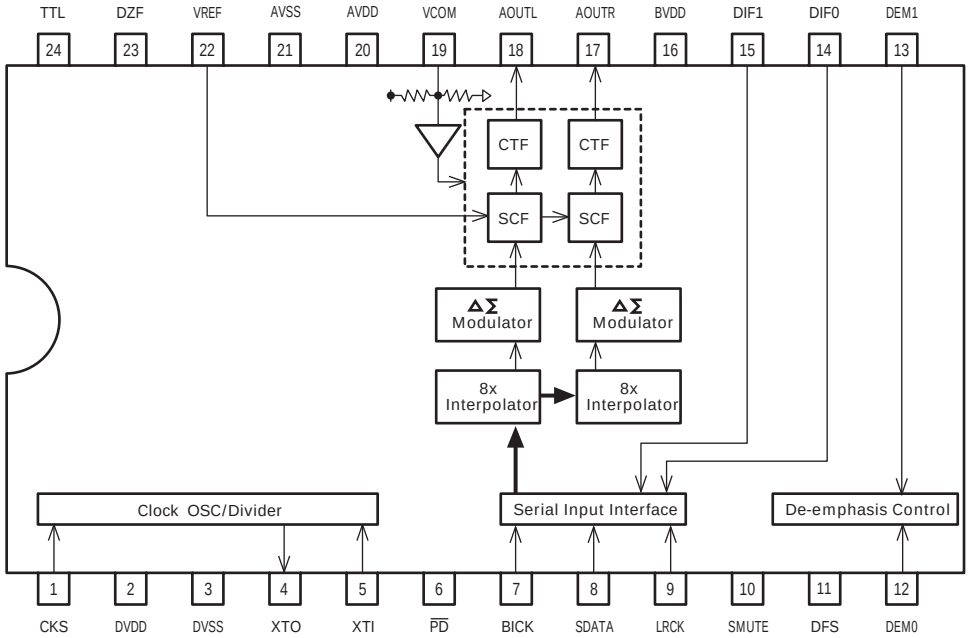
● Pin Functions (PM0017AM)

Pin No.	Pin Name	Function and Operation
1	AGND	Analog GND
2	Vref	Reference voltage noise cut
3-8	IN1-6	CH1-6 input
9,10	NC	Note used
11	Ct	Terminal to set forced switching time
12	DGND	Digital GND
13	STB	Strobe input
14	CLK	Clock input
15	DATA	Data input
16	NC	Not used
17-22	OUT6-1	CH6-1 output
23	DVCC	Digital GND
24	AVCC	Analog GND

PM0017AM



AK4321VF

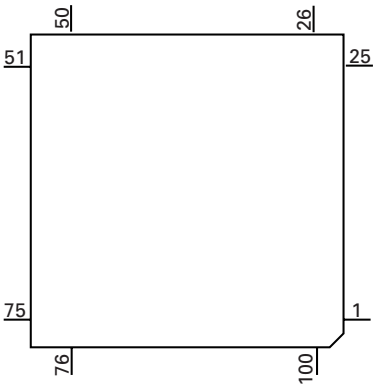


● Pin Functions (AK7712AVT)

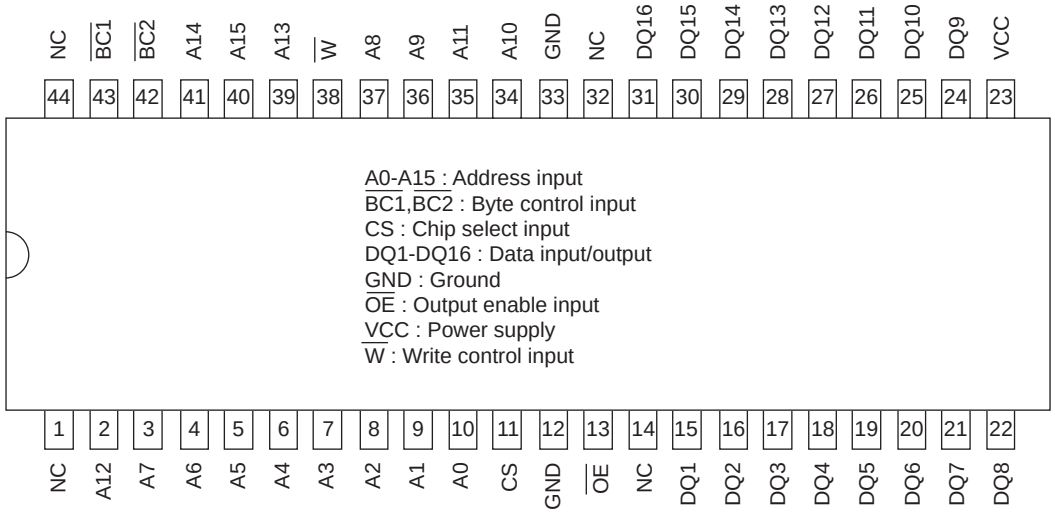
Pin No.	Pin Name	I/O	Function and Operation
1	TSTI1	I	Test input 1
2	OPCL	I	ADC,DAC connection select
3	$\overline{\text{PDAD}}$	I	AD reset control
4	$\overline{\text{PDDA}}$	I	DA reset control
5	$\overline{\text{PD}}$	I	Power down
6	$\overline{\text{RST}}$	I	Reset input
7	TSTIO1	I/O	Test input/output 1
8	TSTIO2	I/O	Test input/output 2
9	TSTIO3	I/O	Test input/output 3
10,11	DVB		Digital PCB power supply
12	SDIN2	I	Serial data input 2
13	SDAD	O	Serial data output 2
14	SDOUT2	O	Serial data output 3
15	SDDA	I	Serial data input 3
16	SDDA2	I	Serial data input 4
17	SDOUT3	O	Serial data output 4
18	SDOUT1	O	Serial data output 1
19	SDIN1	I	Serial data input 1
20	SMODE	I	Interface clock select
21	BCLK	I/O	Clock input/output for serial data input signal input/output
22	LRCK	I/O	L/R channel Identification Signal input/output
23	CLKO	O	Master clock output
24	DVDD		Digital power supply
25	DVSS		Digital GND
26	XTI	I	Clock input
27	XTO	O	Oscillator output
28	TSTI2	I	CLKO output control
29	$\overline{\text{CS}}$	I	Chip select input for micro-computer interface
30	$\overline{\text{WRQ}}$	I	Command register reset input for micro-computer interface
31	DVSS		Digital GND
32	DVDD		Digital power supply
33	SCLK	I	Serial data input clock input for micro-computer interface
34	SI	I	Serial data input for micro-computer interface
35	WRDY	O	Data write ready output for micro-computer interface
36	DRDY	O	Output data ready output for micro-computer interface
37	SO	O	Serial data output for micro-computer interface
38	$\overline{\text{CASRF}}$	O	External DRAM CAS/pseudo SRAM refresh
39	$\overline{\text{RASCE}}$	O	External DRAM RAS/pseudo SRAM-ce
40	$\overline{\text{WE}}$	O	External SRAM/pseudo SRAM/DRAM write signal output
41-48	A16-A9	O	External RAM address output
49	DVSS		Digital GND
50	DVDD		Digital power supply
51-59	A8-A0	O	External RAM address output
60	$\overline{\text{OE}}$	O	External SRAM/pseudo SRAM/DRAM output enable signal output
61-68	IO0-IO7	I/O	External RAM data input/output
69	DVSS		Digital GND
70	DVDD		Digital power supply
71	DZFSET	I	Zero position detect setup
72	DVSS		Digital GND
73	DVDD		Digital power supply
74,75	DVB		Digital PCB power supply
76	DZF2	O	Zero input detect (DAC2)
77	DZF1	O	Zero input detect (DAC1)
78	NC		Not used
79	AVB		Analog PCB power supply
80	AOUTR2	O	DAC2 Rch analog output 2
81	AOUTL2	O	DAC2 Lch analog output 2
82	NC		Not used

Pin No.	Pin Name	I/O	Function and Operation
83	AOUTR1	O	DAC1 Rch analog output 1
84	AOUTL1	O	DAC1 Lch analog output 1
85	VRDAL	I	DAC reference voltage input
86	AVSS		Analog GND
87	AVDD		Analog power supply
88	VRDAH	I	DAC reference voltage input
89	NC		Not used
90	AINR-	I	ADC Rch analog inverted input
91	AINR+	I	ADC Rch analog input
92	AINL-	I	ADC Lch analog inverted input
93	AINL+	I	ADC Lch analog input
94	VCOM	O	Common voltage
95	VRADL	I	ADC reference voltage input
96	AVSS		Analog GND
97	AVDD		Analog power supply
98	VRADH	I	ADC reference voltage input
99	AVB		Analog PCB power supply
100	NC		Not used

AK7712AVT

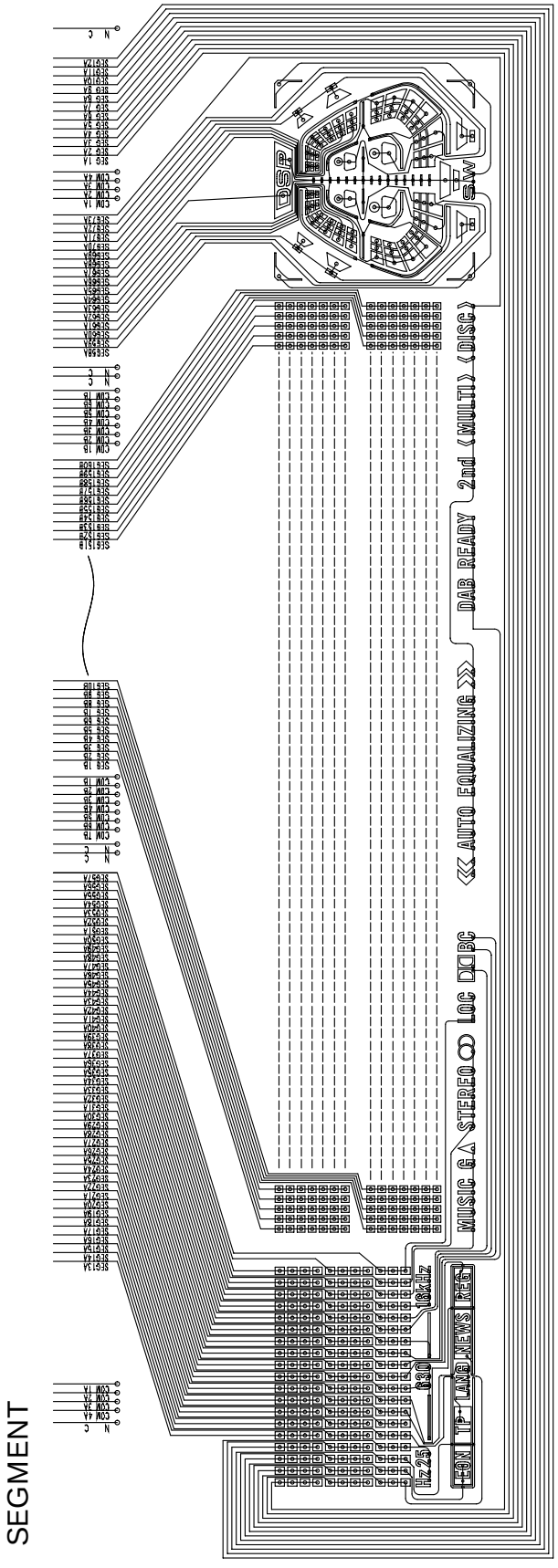


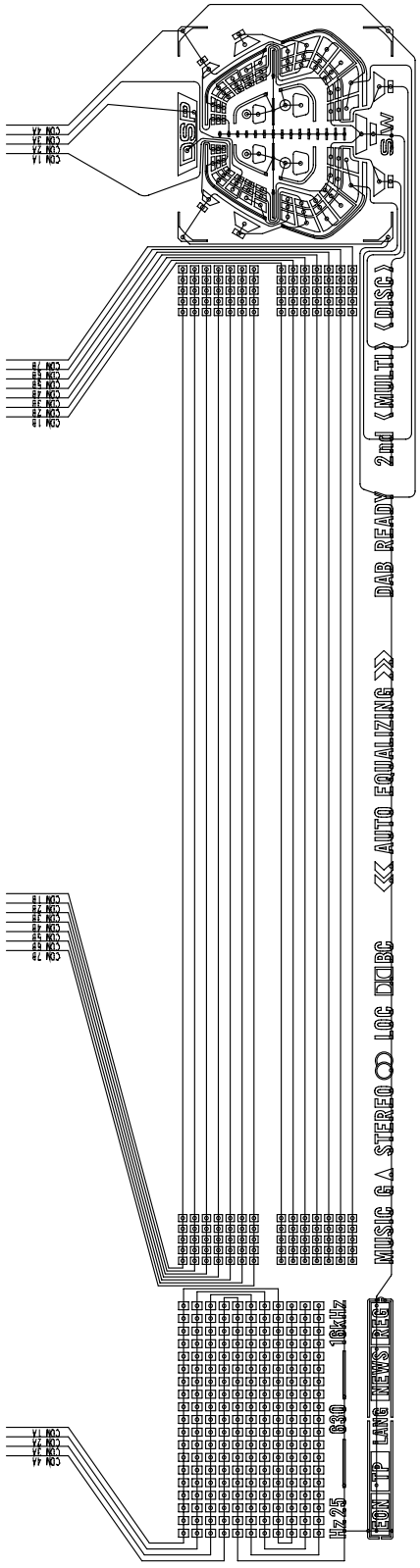
GGC1325(M5M51016BTP-70LL)



7.1.2 DISPLAY

● CAW1471





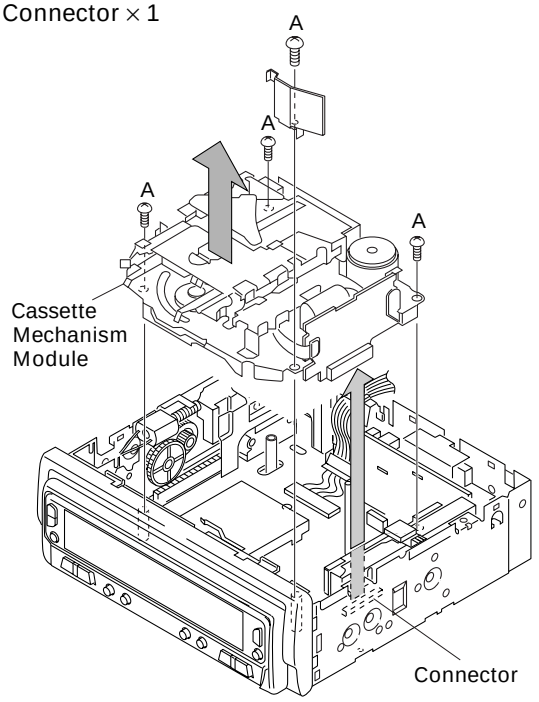
7.2 DIAGNOSIS

7.2.1 DISASSEMBLY

● Remove the Case (Not shown)

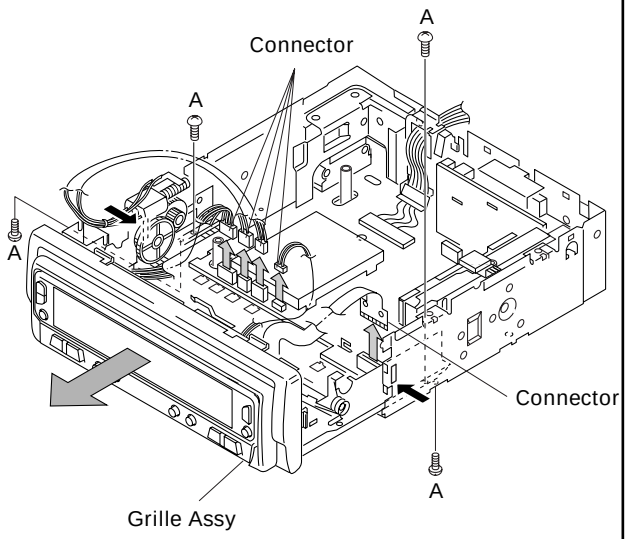
● Remove the Cassette Mechanism Module

1. A × 4
2. Connector × 1



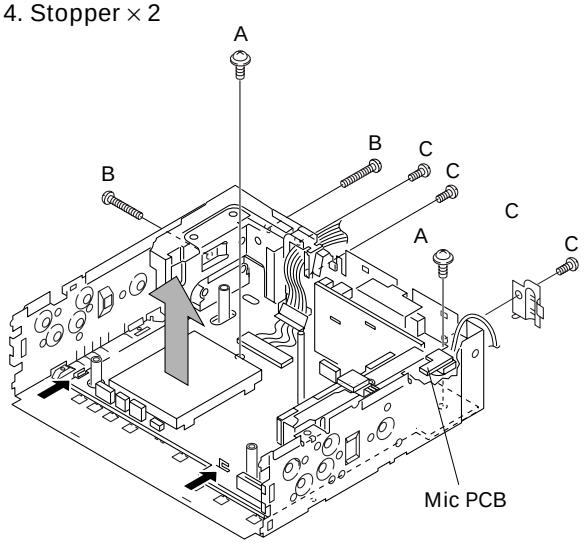
● Remove the Grille Assy

1. A × 4
2. Stopper × 2
3. Connector × 5



● Remove the Tuner Amp Unit

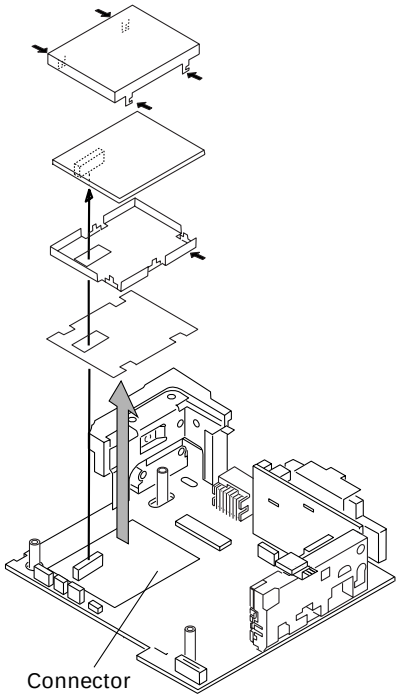
1. A × 2
2. B × 2
3. C × 4
4. Stopper × 2



Note : Pull up and remove with Mic PCB.
(Be careful connecting for Connector.)

● Remove the DSP Unit

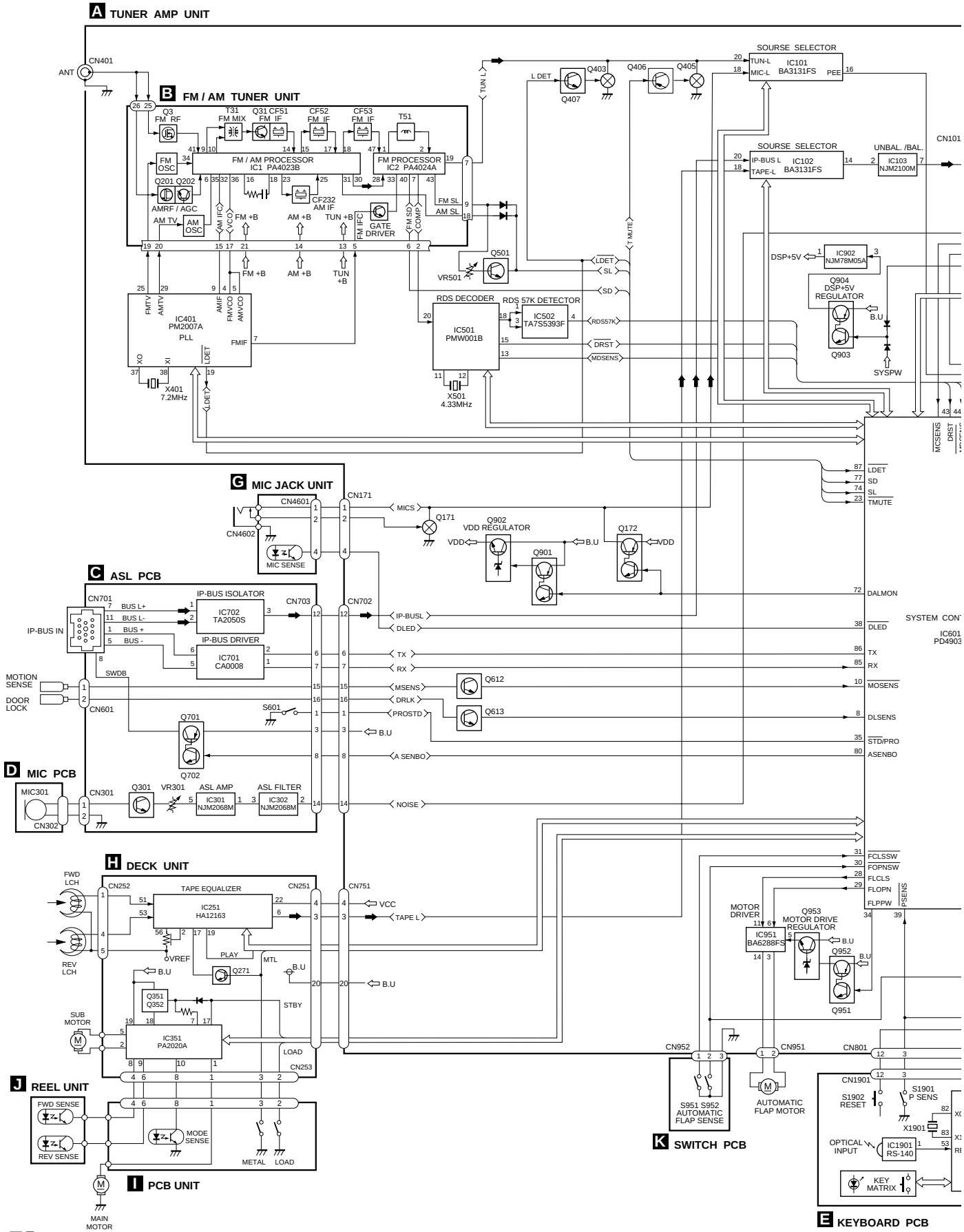
1. Stopper × 4
2. Connector × 1
3. Stopper × 2



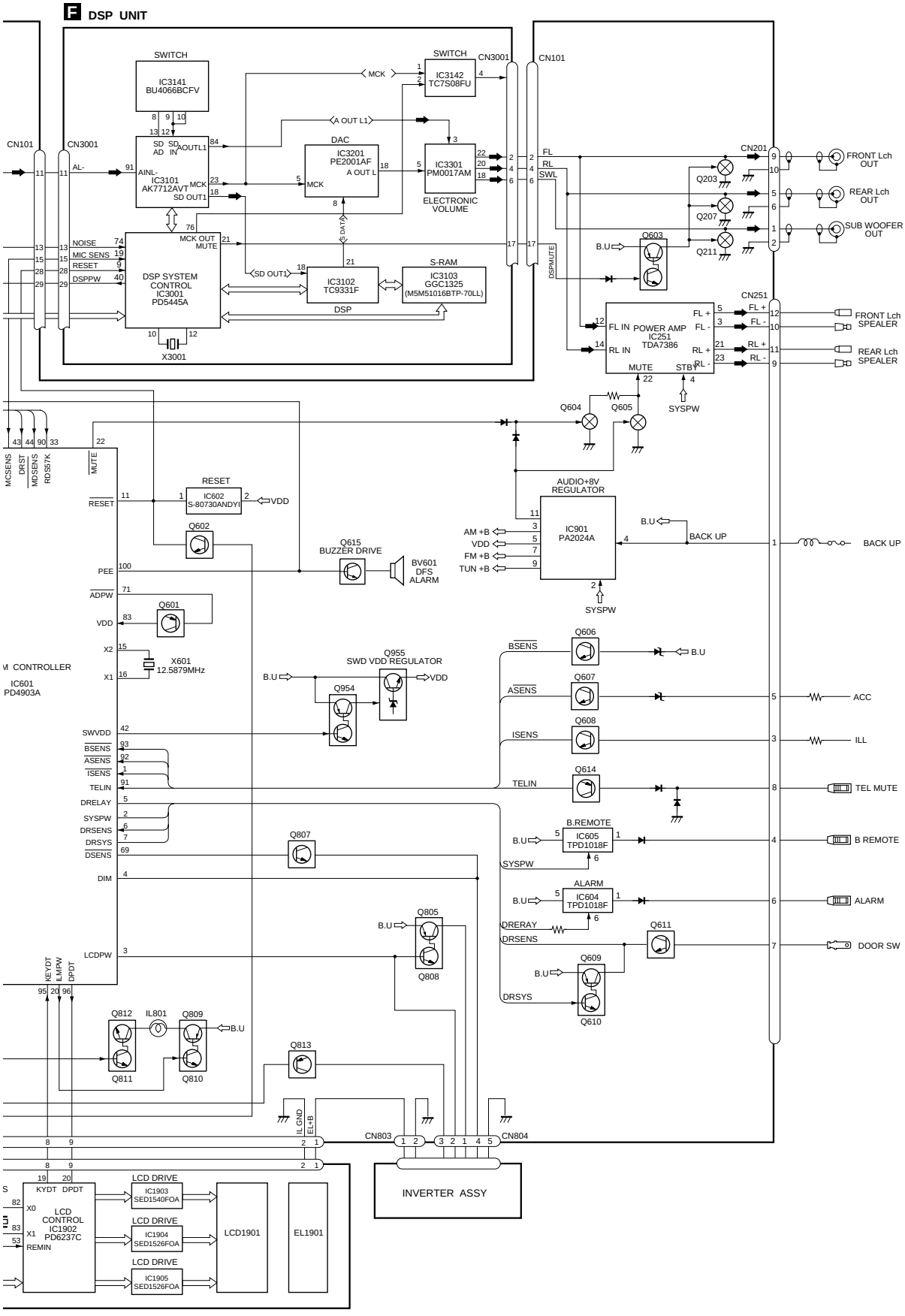
7.3 EXPLANATION

7.3.1 BLOCK DIAGRAM

● KEH-P9700R/EW



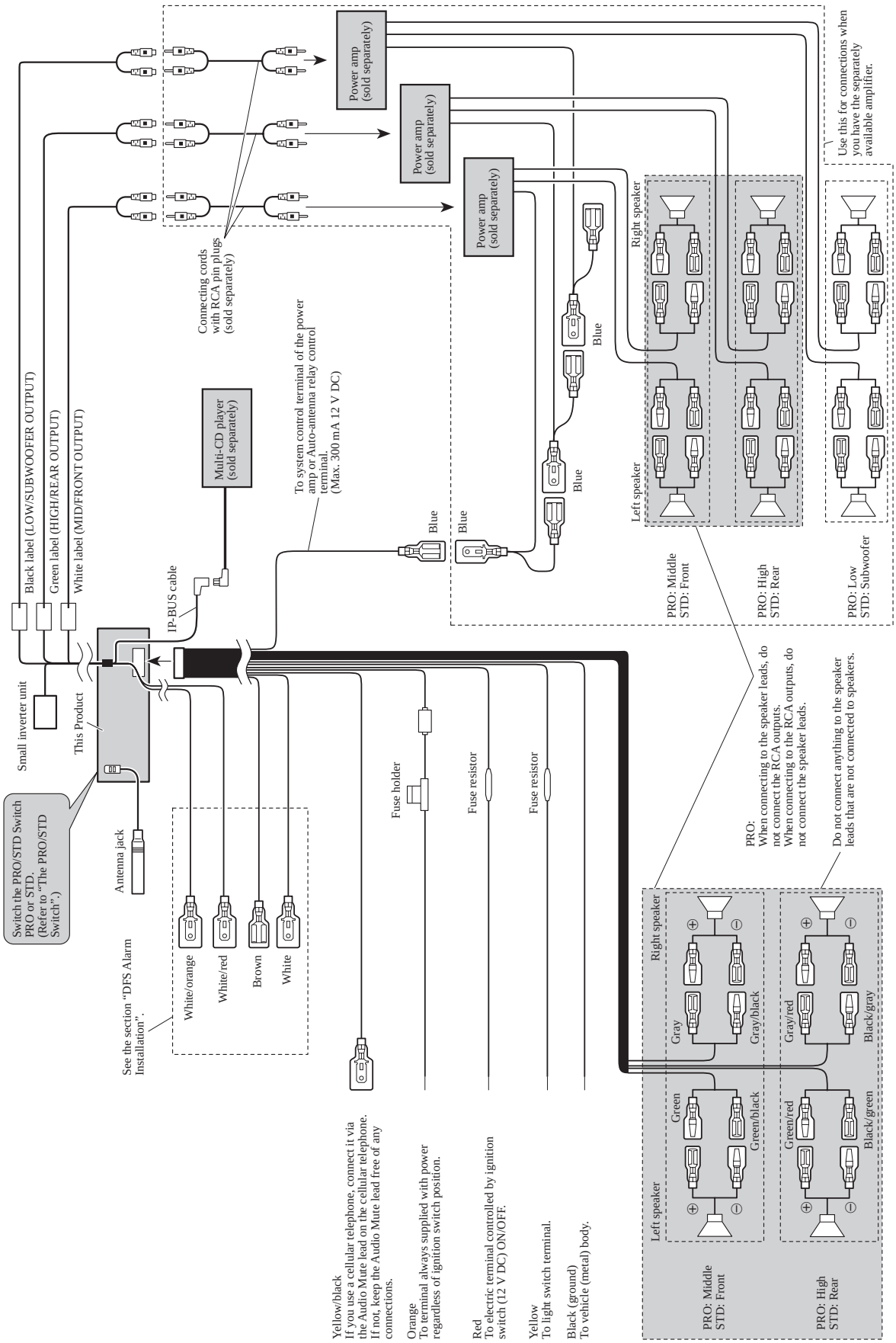
F DSP UNIT


SWITCH
IC3141
BU4066BCFV
SWITCH
IC3142
TC7S08FU
CN3001
CN101
MCK
A OUT L1
DAC
IC3201
PE2001AF
A OUT L
IC3301
PM0017AM
ELECTRONIC
VOLUME
FL
RL
SWL
CN201
FRONT Lch
OUT
REAR Lch
OUT
SUB WOOFER
OUT
Q203
Q207
Q211
Q603
B.U
DSPMUTE
CN251
FRONT Lch
SPEALER
REAR Lch
SPEALER
POWER AMP
IC251
TDA7386
FL IN
RL IN
MUTE
STBY
SYSPW
Q604
Q605
AUDIO+8V
REGULATOR
IC901
PA2024A
AM +B
VDD
FM +B
TUN +B
BACK UP
RESET
IC602
S-80730ANDYI
VDD
Q602
Q615
BUZZER DRIVE
BV601
DFS
ALARM
Q601
X601
12.5879MHz
IC601
PD4903A
Q955
SWD VDD REGULATOR
Q954
Q606
Q607
Q608
Q614
BSENS
ASENS
ISENS
TELIN
ACC
ILL
TEL MUTE
B.REMOTE
IC605
TPD1018F
B REMOTE
ALARM
IC604
TPD1018F
DRERAY
DRSENS
DRSYS
Q611
Q609
Q610
DOOR SW
Q807
Q805
Q808
Q812
IL801
Q809
Q811
Q810
Q813
IL GND
EL+B
CN803
CN804
INVERTER ASSY
LCD DRIVE
IC1903
SED1540FOA
IC1904
SED1526FOA
IC1905
SED1526FOA
LCD CONTROL
IC1902
PD6237C
LCD1901
EL1901
S-RAM
IC3103
GGC1325
(M5M51016BTP-70LL)
IC3102
TC9331F
DSP SYSTEM
CONTROL
IC3001
PD5445A
X3001
IC3101
AK7712AVT
NOISE
MIC SENS
RESET
DSPPW
MCK OUT
MUTE
SD OUT1
DATA
DSP

8. OPERATIONS AND SPECIFICATIONS(ES model)

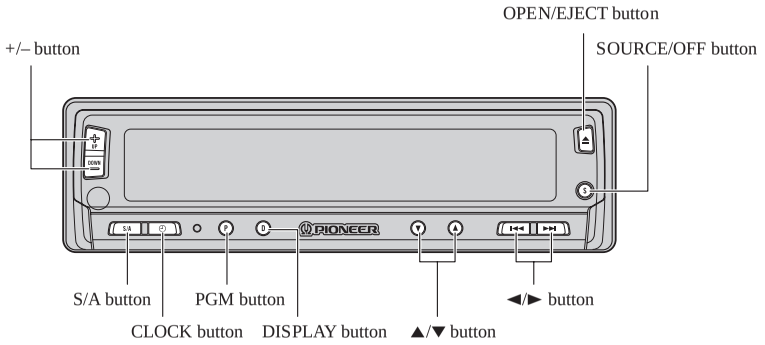
Connecting the Units

● Connection Diagram

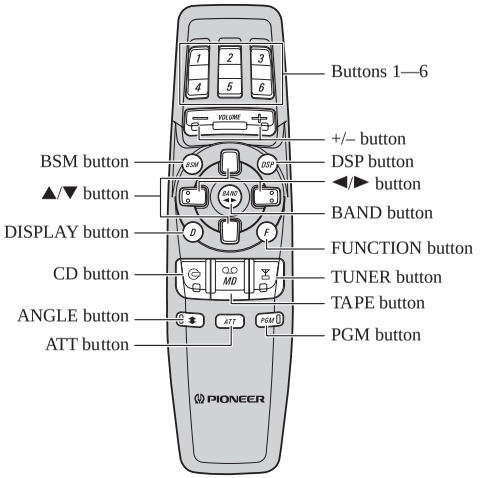


Key Finder

Head Unit



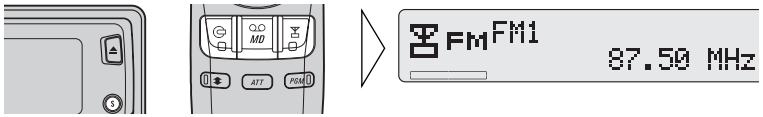
Remote Controller



Basic Operation

Switching Power ON/OFF

- Select the desired source (such as the tuner).



● Head Unit

Each press of the SOURCE/OFF button selects the desired source in the following order:

CD player (one disc only) → Tuner → Tape → Multi-CD player→ AUX

To switch the sources OFF, hold down the SOURCE/OFF button for 1 second or more.

● Remote Controller

Each press of the button selects the desired source in the following order:

TUNER button : Tuner → OFF
TAPE button : Tape → AUX → OFF
CD button : CD player (one disc only) → Multi-CD player→ OFF

Note:

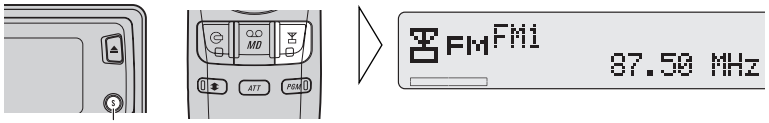
- In the following cases, the sound source will not change:
  * When a product is not connected to this unit.
  * When no tape is set in this product.
  * When no magazine is loaded in the Multi-CD player.
  * When the AUX (external input) is set to OFF.

Tuner Operation

Reset the AM tuning step from 9 kHz (the factory preset step) to 10 kHz when using the tuner in North, Central or South America.

Basic Operation of Tuner

1. Select Tuner.

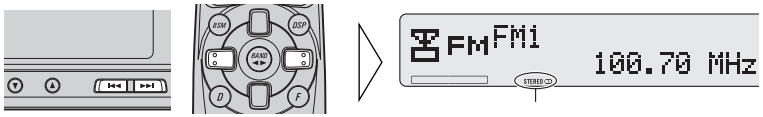


Each press changes the Source ...

2. Select the desired band.

FM1 → FM2 → FM3 → AM

3. Tune the receiver to a higher or lower frequency.



"STEREO ◯◯"

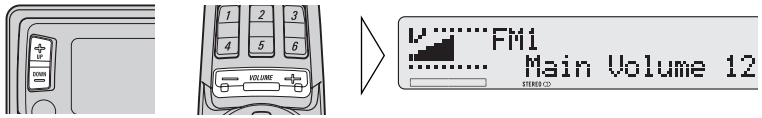
This product's tuner lets you select the tuning by changing the length of the time you press the button.

Manual Tuning (step by step)	0.3 seconds or less
Seek Tuning (automatically)	0.3–2 seconds
Manual Tuning (continuously)	2 seconds or more

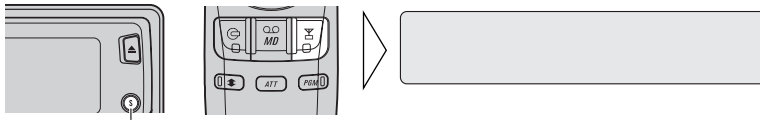
Note:

- "STEREO ◯◯" indicator lights when a stereo station is selected.
- To select a weak broadcasting station that cannot be tuned in with the Seek Tuning function, tune in with Manual Tuning.

4. Raise or lower the volume.



5. Turn the source OFF.



Hold for 1 second

Entering the Function Menu

In this menu you can select tuner functions.

- Select the desired mode in the Function Menu.

Each press changes the Mode ...

Each press of the FUNCTION button selects the mode in the following order:

BSM → Local

To cancel the Function Menu, press the BAND button.

Note:

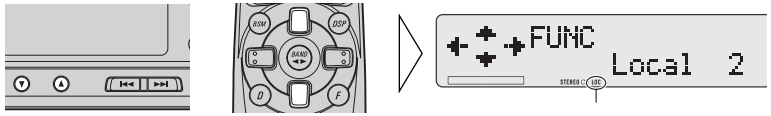
- After entering the Function Menu, if you do not perform an operation within about 30 seconds, the Function Menu is automatically canceled.

Tuner Operation

Local Seek Tuning

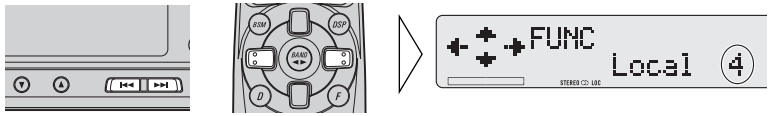
This mode selects only stations with especially strong signals.

1. Select the Local mode (Local) in the Function Menu.
2. Switch the Local mode ON or OFF.



"LOC"

3. Select the desired Local Seek sensitivity.



FM : Local 1 ↔ Local 2 ↔ Local 3 ↔ Local 4
AM : Local 1 ↔ Local 2

Note:

- The "Local 4" setting allows reception of only the strongest stations, while lower settings let you receive progressively weaker stations.

To cancel the Function Menu, press the BAND button.

Preset Tuning

Up to 18 FM stations (6 in FM1, FM2 and FM3) and 6 AM stations can be stored in memory.
Store the stations in memory under buttons 1–6 beforehand with the BSM (Best Stations Memory) or Preset Memory function.

BSM (Best Stations Memory)

The BSM function stores stations in memory automatically.

- Switch the BSM mode ON.

Hold for 2 seconds

The stations with the strongest signals will be stored under buttons 1–6 and in order of their signal strength.

- To cancel the process, press the BSM button before memorization is complete.

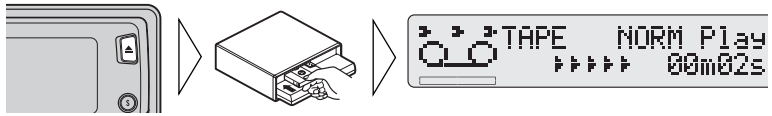
Note:

- You can also switch the BSM function ON/OFF in the Function Menu.

Using the Cassette Player

Basic Operation of Cassette Player

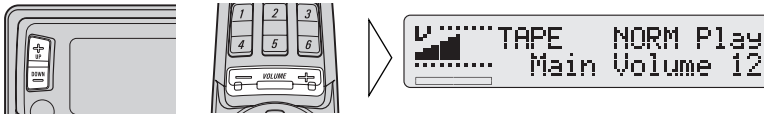
1. Open the front panel and insert the cassette tape.



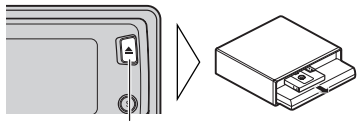
"METAL" appears on the display for a few seconds when a metal or chrome tape is inserted. Nothing is displayed for a normal tape.

2. Switch tape playback from side A to side B, or vice versa.

3. Raise or lower the volume.



4. Remove the cassette tape.



Hold for 2 seconds

Be sure to close the front panel by pressing the OPEN/EJECT button after removing the cassette tape.

Note:

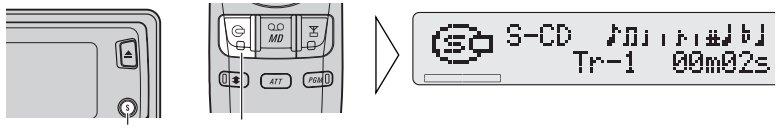
- The Tape function can only be turned ON/OFF with the cassette tape remaining in this product.

Using CD Player (one disc only)

This product can control a CD player (one disc only).

Basic Operation of CD Player

1. Select the CD player source.



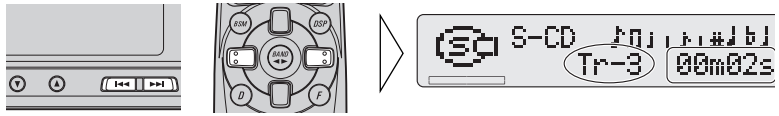
Each press changes the Source ...

Each press changes the Source ...

Note:

- The CD player is selected only when a CD is loaded.
- If the CD player cannot operate properly, an error message such as "ERROR-14" is displayed. Refer to the CD player owner's manual.

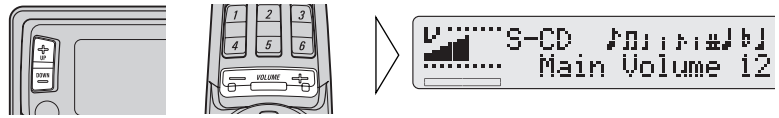
2. Select the desired track (or fast-forward/reverse, per the chart below).



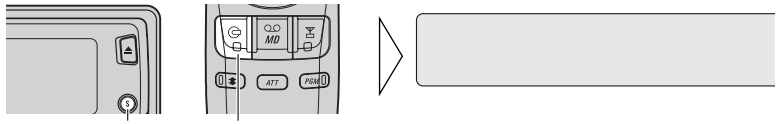
This product lets you select the track search function or fast-forward/reverse function by changing the length of the time you press the button.

Track search	0.5 seconds or less
Fast-forward/Reverse	Continue pressing

3. Raise or lower the volume.



4. Turn the source OFF.



Hold for 1 second

Each press changes the Source ...

Music Group Play (for 50-Disc type only)

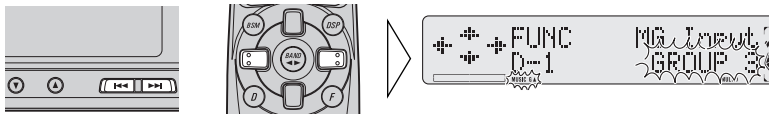
The Music Group Play function classifies discs loaded in a 50-Disc type multi-CD player into 10 groups, and plays only discs from the same group. Up to 100 discs can be classified into groups. (Music Group, ITS program and Disc Title data for up to 100 discs can be stored in memory.)

Note:

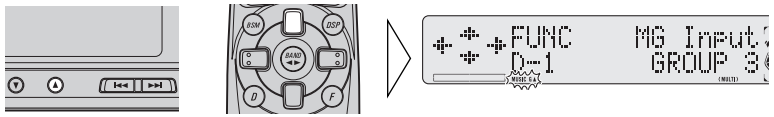
- Music Group types are as follows:
  ROCK 1, ROCK 2, POP, JAZZ, INSTRMNT, CLASSIC, GROUP 1, GROUP 2, GROUP 3, GROUP 4

Classifying a Disc into a Group

1. Play the disc you want to classify into a group.
2. Select the Music Group Input mode (MG Input) in the Detailed Setting Menu.
3. Select the desired group.



4. Register the disc in the selected group.



To cancel the Detailed Setting Menu, press the BAND button.

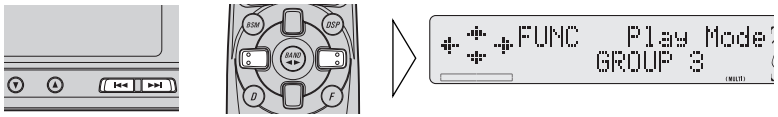
Note:

- Even if you remove a disc from a magazine after you have registered it in a group, its assigned group is stored in memory. This means that when you reinsert the disc in the magazine, there's no need to reassign it to the group.
- After assigning 100 discs to groups, data input for a new disc overwrites data for the disc that has been played least recently.

Music Group Playback

Only discs in the same group are played.

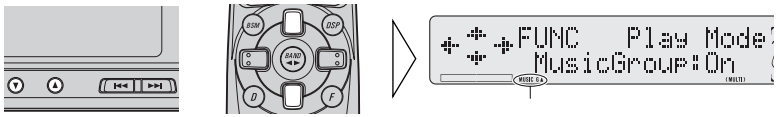
1. Select the Music Group Playback mode (Music Group) in the Function Menu.
2. Select the desired Music Group.



Note:

- At first, the group of the disc playing is displayed. If the disc playing does not belong to a group, "NO GROUP" is displayed.

3. Switch music group playback ON or OFF.



"Music G ▲"

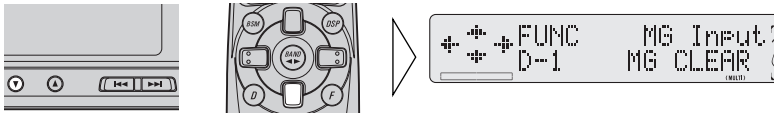
To cancel the Function Menu, press the BAND button.

Note:

- If there are no discs registered in the selected group, "MG EMPTY" is displayed.

Deleting a Disc from a Music Group

1. Play the disc you want to delete from a group.
2. Select the Music Group Input mode (MG Input) in the Detailed Setting Menu.
3. Delete the disc from the group.



To cancel the Detailed Setting Menu, press the BAND button.

Note:

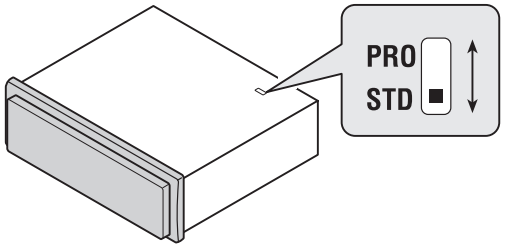
- During music group playback, if you have deleted the disc currently playing from the group, the next disc in the group is played. If all discs in the same group have been deleted, "NO GROUP" is displayed.

Using the Digital Signal Processor (DSP)

Switching the Operation Mode

- Set the PRO/STD switch to PRO or STD.

Set the PRO/STD switch on the side of the unit to the desired Operation mode with a pen tip or other pointed instrument. After switching, reset the unit.



Note:

- If you press the RESET button, information in the unit's Preset memory and other information is erased.

Entering the DSP Function Menu

In this menu you can select DSP Functions.

- Select the desired mode in the DSP Function Menu.

Each press
changes the Mode ...

● PRO mode

Each press of the DSP button selects the mode in the following order:

Auto-equalizer mode (A.EQ Mode)* → Balance Adjustment mode (Balance) → Graphic Equalizer mode (EQ-Nuance) → 13-Band Graphic Equalizer Adjustment mode (EQ-Fine)** → Position Selector mode (Position)

* If Auto-equalizing is not performed, you cannot switch to the Auto-equalizer mode.

** You can switch to the 13-Band Graphic Equalizer Adjustment mode only when selecting a user curve in the Graphic Equalizer mode.

To cancel the DSP Function Menu, press the BAND button.

Note:

- After entering the DSP Function Menu, if you do not perform an operation within about 30 seconds, the DSP Function Menu is automatically canceled.

● STD mode

Each press of the DSP button selects the mode in the following order:

Auto-equalizer mode (A.EQ Mode)* → Balance Adjustment mode (Fader) → Graphic Equalizer mode (EQ-Nuance) → 13-Band Graphic Equalizer Adjustment mode (EQ-Fine)** → Sound Field Control (SFC Mode) → Position Selector mode (Position)

* If Auto-equalizing is not performed, you cannot switch to the Auto-equalizer mode.

** You can switch to the 13-Band Graphic Equalizer Adjustment mode only when selecting a user curve in the Graphic Equalizer mode.

To cancel the DSP Function Menu, press the BAND button.

Note:

- After entering the DSP Function Menu, if you do not perform an operation within about 30 seconds, the DSP Function Menu is automatically canceled.

Using the Digital Signal Processor (DSP)

Entering the DSP Detailed Setting Menu

In this Menu, you can select functions enabling adjustment of settings to match conditions in your car, such as the Network mode and Automatic Sound Levelizer.

- Enter the DSP Detailed Setting Menu.

Hold for 2 seconds

● PRO mode

Each press of the DSP button selects the mode in the following order:

Network mode (Low-NW) → Time Alignment mode (T.Alignment) → Loudness mode (Loudness) → Automatic Sound Levelizer mode (ASL) → Source Level Adjustment mode (SLA)*

* When the source is an FM broadcast, you cannot switch to the Source Level Adjustment mode (SLA).

To cancel the DSP Detailed Setting Menu, press the BAND button.

Note:

- After entering the DSP Detailed Setting Menu, if you do not perform an operation within about 30 seconds, the DSP Detailed Setting Menu is automatically canceled.

● STD mode

Each press of the DSP button selects the mode in the following order:

Network mode (Sub-W-NW) → Loudness mode (Loudness) → Automatic Sound Levelizer mode (ASL) → Source Level Adjustment mode (SLA)*

* When the source is an FM broadcast, you cannot switch to the Source Level Adjustment mode (SLA).

To cancel the DSP Detailed Setting Menu, press the BAND button.

Note:

- After entering the DSP Detailed Setting Menu, if you do not perform an operation within about 30 seconds, the DSP Detailed Setting Menu is automatically canceled.

Position Selector Function

One way to assure a more natural sound is to clearly position the stereo sound image (putting you in the center of the sound field). The Position Selector function adjusts delay time and volume level of sound from each speaker to match seat positions and the number of people in the car, and lets you recall settings at the touch of a button. The result is a natural sound regardless of the seat you are sitting in.

Button	Position
▲	Front seat
▼	Front and Rear seat
◄	Driver's seat (steering located on the LEFT side)
►	Driver's seat (steering located on the RIGHT side)

Note:

- In the PRO mode, front and rear seats cannot be selected.

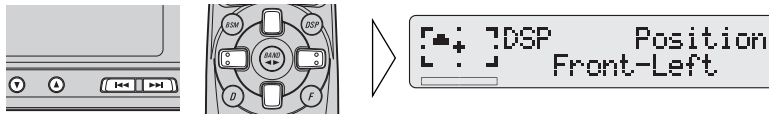
About the Position Indicator

This lets you confirm current Position setting without switching to the Position Selector mode.

Front-Left Front-Right Front All

Setting the Listening Position

1. Select the Position Selector mode (Position) in the DSP Function Menu.
2. Press one of buttons ▲/▲/▼/► to select the desired Position. (e.g. Press button ◄.)



To cancel the listening position, press the same button again.

Note:

- In the PRO mode, pressing the ▼ button cancels the listening position.

Specifications

General

Power source ..... 14.4 V DC (10.8 – 15.1 V allowable)
Grounding system ..... Negative type
Max. current consumption..... 10 A
Dimensions
(DIN) (chassis) ....178 (W) × 50 (H) × 155 (D) mm
(nose) ..... 188 (W) × 58 (H) × 20 (D) mm
(D) (chassis) ... 178 (W) × 50 (H) × 160 (D) mm
(nose) ..... 170 (W) × 46 (H) × 15 (D) mm
Weight ..... 1.8 kg

Amplifier (KEH-P9700R/EW)

Maximum power output ..... 40 W × 4
Continuous power ourput ..... 25 W × 4
(DIN45324, +B =14.4 V)
Load impedance ..... 4 Ω (4 – 8 Ω allowable)
Preout output level/output impedance ..... 500 mV/1 kΩ

Amplifier (KEH-P9750/ES)

Continuous power output is 20 W per channel min. into 4 ohms, both channels driven 50 to 15,000 Hz with no more than 5% THD.
Maximum power output ..... 40 W × 4
Load impedance ..... 4 Ω (4 – 8 Ω allowable)
Preout output level/output impedance ..... 500 mV/1 kΩ

Cassette player

Tape .....Compact cassette tape (C-30 – C-90)
Tape speed .... 4.76 cm/sec.(+0.14cm/sec.,-0.05cm/sec.)
Fast forward/rewinding time Approx. 100 sec. for C-60
Wow & flutter ..... 0.09% (WRMS)
Frequency response..... Metal: 30 – 22,000 Hz (±3 dB)
Stereo separation ..... 45 dB
Signal-to-noise ratio
.... Metal: Dolby B NR IN: 67 dB (IEC-A network)
Dolby NR OUT: 61 dB (IEC-A network)

FM tuner

Frequency range ..... 87.5 – 108 MHz
Usable sensitivity
..... 11 dBf (1.0 µV/75 Ω, mono, S/N: 30 dB)
50 dB quieting sensitivity .. 16 dBf (1.7 µV/75 Ω, mono)
Signal-to-noise ratio ..... 70 dB (IEC-A network)
Distortion ..... 0.3% (at 65 dBf, 1 kHz, stereo)
Frequency response ..... 30 – 15,000 Hz (±3 dB)
Stereo separation ..... 40 dB (at 65 dBf, 1 kHz)

AM tuner (KEH-P9750/ES)

Frequency range ..... 531 – 1,602 kHz (9 kHz)
530 – 1,710 kHz (10 kHz)
Usable sensitivity ..... 18 µV (S/N: 20 dB)
Selectivity ..... 50 dB (±9 kHz)
50 dB (±10 kHz)

MW tuner (KEH-P9700R/EW)

Frequency range ..... 531 – 1,602 kHz
Usable sensitivity ..... 18 µV (S/N: 20 dB)
Selectivity ..... 50 dB (±9 kHz)

LW tuner (KEH-P9700R/EW)

Frequency range ..... 153 – 281 kHz
Usable sensitivity ..... 30 µV (S/N: 20 dB)
Selectivity .... 50 dB (±9 kHz)

DSP

Equalizer (13 Band Graphic Equalizer)
Frequency.....50, 80, 125, 200, 315, 500, 800, 1.25 k, 2 k, 3.15 k, 5 k, 8 k, 12.5 k (Hz)
Level ..... ± 12 dB (2 dB)
Auto Equalizer (STD Mode)
(Front & Rear & Subwoofer 13 band graphic + Rear 2 band parametric)
Frequency (Front & Rear & Subwoofer)
..... 50, 80, 125, 200, 315, 500, 800, 1.25 k, 2 k, 3.15 k, 5 k, 8 k, 12.5 k (Hz)
Frequency (Rear) ..... 100 Hz – 8 kHz (1/3 oct)
Level ..... +6 — –12 dB (2 dB)
Q Factor (Rear) 1.2, 3.6
Auto Equalizer (PRO Mode)
(13 band graphic)
Frequency ..... 50, 80, 125, 200, 315, 500, 800, 1.25 k, 2 k, 3.15 k, 5 k, 8 k, 12.5 k (Hz)
Level ..... +6 — –12 dB (2 dB)
Network (STD Mode)
Front/Rear HPF frequency: 50, 80, 125, 200 (Hz)
Slope: 0, –6, –12 dB/oct
Level: 0 — –24 dB (1 dB)
Subwoofer (Mono)
..... LPF frequency: 50, 63, 80, 100, 125, 160, 200 (Hz)
Slope: –6, –12, –18 dB/oct
Level: +6 — –24 dB (1 dB)
Phase: Normal/Reverse
Network (PRO Mode)
High .. HPF frequency: 2 k, 2.5 k, 3.15 k, 4 k, 5 k, 6.3 k, 8 k, 10 k, 12.5 k (Hz)
Slope: –6, –12, –18, –24 dB/oct
Level: +6 — –24 dB (1 dB)
Phase: Normal/Reverse
Mid .... LPF frequency: 2 k, 2.5 k, 3.15 k, 4 k, 5 k, 6.3 k, 8 k, 10 k, 12.5 k (Hz)
HPF frequency: 40, 50, 63, 80, 100, 125, 160, 200, 250 (Hz)
Slope: 0, –6, –12, –18, –24 dB/oct
Level: 0 — –24 dB (1 dB)
Phase: Normal/Reverse
Low (Stereo/Mono)
..... LPF frequency: 40, 50, 63, 80, 100, 125, 160, 200, 250 (Hz)
Slope: –12, –18, –24, –30, –36 dB/oct
Level: +6 — –24 dB (1 dB)
Phase: Normal/Reverse
Time Alignment ..... 0 — 400 cm (2 cm)
0 — 160 inch (0.5 inch)

Note:

- Specifications and the design are subject to possible modification without notice due to improvements.

PIONEER
The Art of Entertainment

Service Manual

ORDER NO.
CRT1640

CASSETTE MECHANISM ASSY

CX-631

- **This service manual describes operation of the cassette mechanism incorporated in models listed in the table below.**
- **When performing repairs use this manual together with the specific manual for model under repair.**

Model	Service Manual	Cassette Mechanism Unit	Deck Unit
KEH-P990/UC	CRT1639	EXK3170	CWM3954
KEX-P820/ES	CRT1656		
KEX-P820RDS/EW	CRT1638		
KEH-P9200RDS/EW, X1BEW	CRT1638	EXK3130	CWM3953
KEH-P9250/ES	CRT1656		
KEH-P8200/UC	CRT1639		
KEH-P8200RDS/EW, X1BEW	CRT1638		
KEH-P8250/ES	CRT1656		
KEH-P790/UC	CRT1654	EXK3110	CWM3952
KEH-P7250/ES	CRT1652		
KEH-P7200RDS/EW	CRT1653		
KEH-P7200/UC	CRT1654		
KEH-P7100RDS/EW	CRT1653		
KEH-P6200/UC	CRT1652		
KEH-P6200RDS/EW	CRT1653	EXK3105	CWM4212
KEH-P6100RDS/EW	CRT1653		
KEH-P590/UC	CRT1652	EXK3100	CWM3951
KEH-P5250/ES	CRT1652		
KEH-P5200/UC	CRT1652		
KEH-P25RDS/EW	CRT1653		
KEH-P15RDS/EW	CRT1653		

CONTENTS

PIONEER ELECTRONIC CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan
PIONEER ELECTRONICS SERVICE INC. P.O.Box 1760, Long Beach, California 90801 U.S.A.
PIONEER ELECTRONICS OF CANADA, INC. 300 Allstate Parkway Markham, Ontario L3R OP2 Canada
PIONEER ELECTRONIC [EUROPE] N.V. Haven 1087 Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS AUSTRALIA PTY.LTD. 178-184 Boundary Road, Braeside, Victoria 3195, Australia TEL:[03]580-9911

K-FFD.DEC. 1994 Printed in Japan

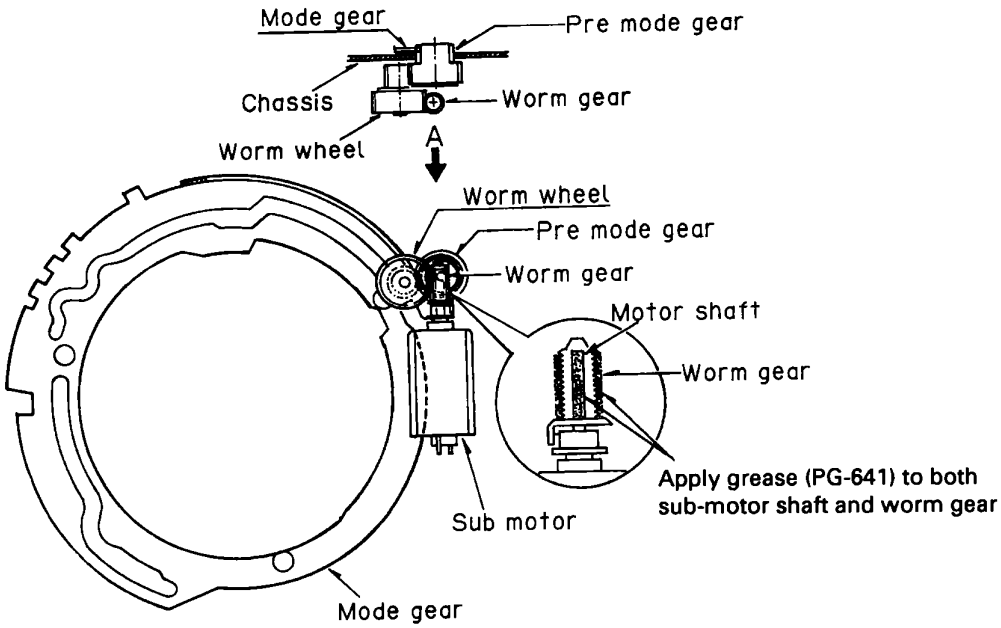
1. MECHANISM DESCRIPTION AND GREASING

1.1 DRIVE OPERATION

Inserting the cassette tape→Draw in→Put it down→Release←→Forward play←→REW←→FF←→Reverse play

Eject←Draw out←Lift←

All motive force(except the force for running a tape) is supplied by sub-motor.



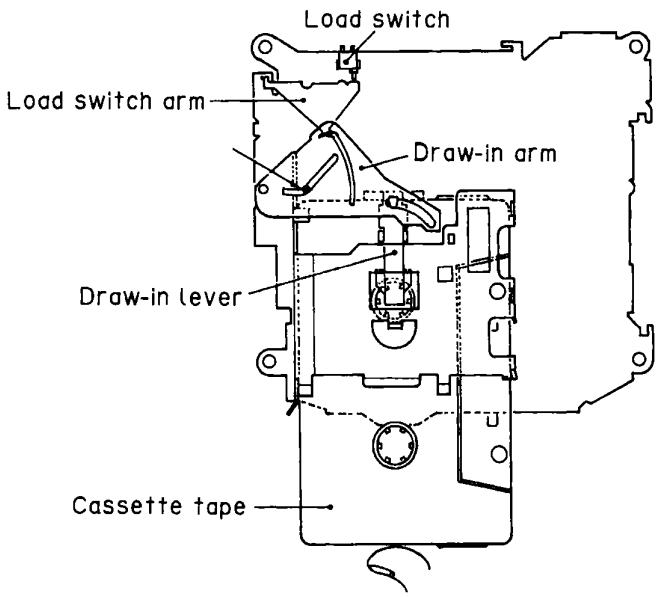


Fig.1

1.2 LOADING AND EJECT OPERATIONS

● Loading the Cassette Tape

1.Push the cassette tape by finger.
2.The draw-in lever is pushed by the cassette tape. And the load switch is turned on by way of the draw-in arm and of the load switch arm.
3.The sub-motor starts running.
4.The mode gear turns in direction (1).
5.The put-down driving lever moves in direction (2).
6.Move the put-down lever operation shaft in direction (3) and turn the draw-in arm in direction (4).
7.The cassette tape is loaded.

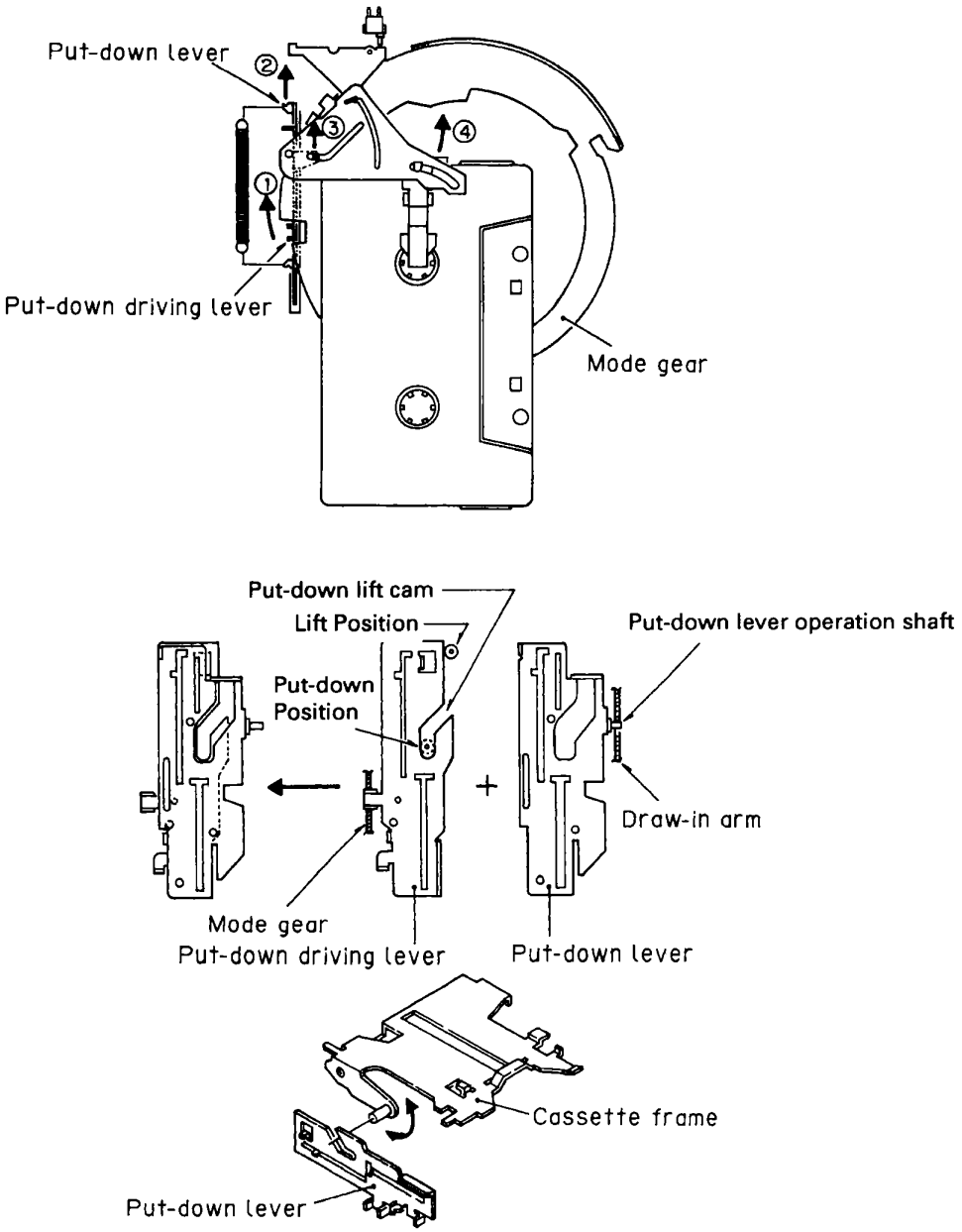


Fig.2

● Ejecting the Cassette Tape

1.The sub-motor starts running in the direction opposite to that in loading.
2.The mode gear turns in direction (5).
3.The put-down driving lever moves in direction (6).
4.Move the put-down lever operation shaft in direction (7) and turn the draw-in arm in direction (8).
5.Pull the load switch arm toward you and turn off the load switch.
6.The sub-motor stops.
7.The cassette tape is ejected.

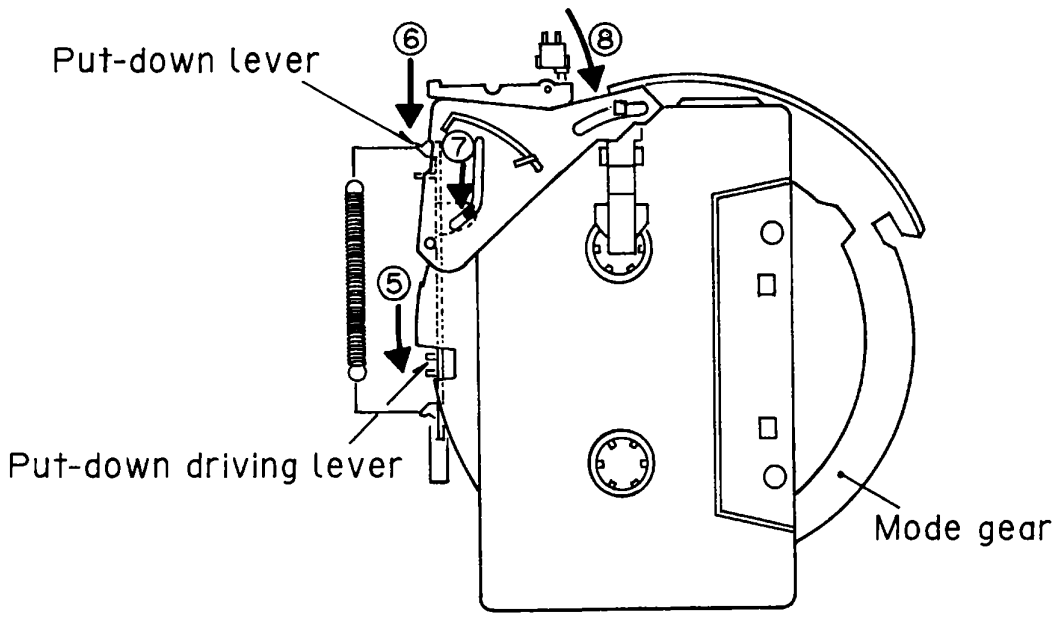


Fig.3

1.3 MODE CHANGEOVER

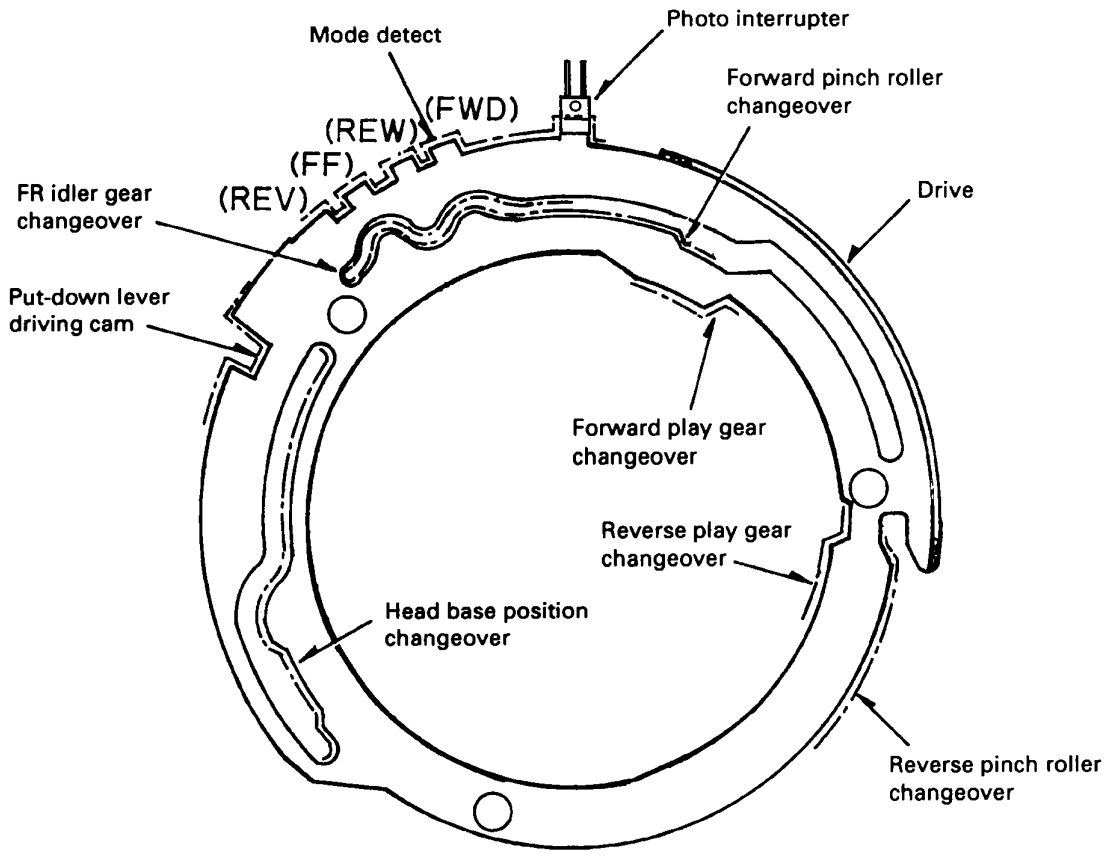


Fig.4

The mode gear is rotated by rotation of the pre mode gear which is driven by the sub-motor. The modes are in series in the order of "release"←→"forward play"←→"REW"←→"FF"←→"reverse play". The rotation of the mode gear makes changeover of the head position, press contact between the pinch rollers(forward, reverse), the rewinding reel rotation, etc.

The actions to be performed in the separate mode are show in Fig.5 through 9.

● **Release**

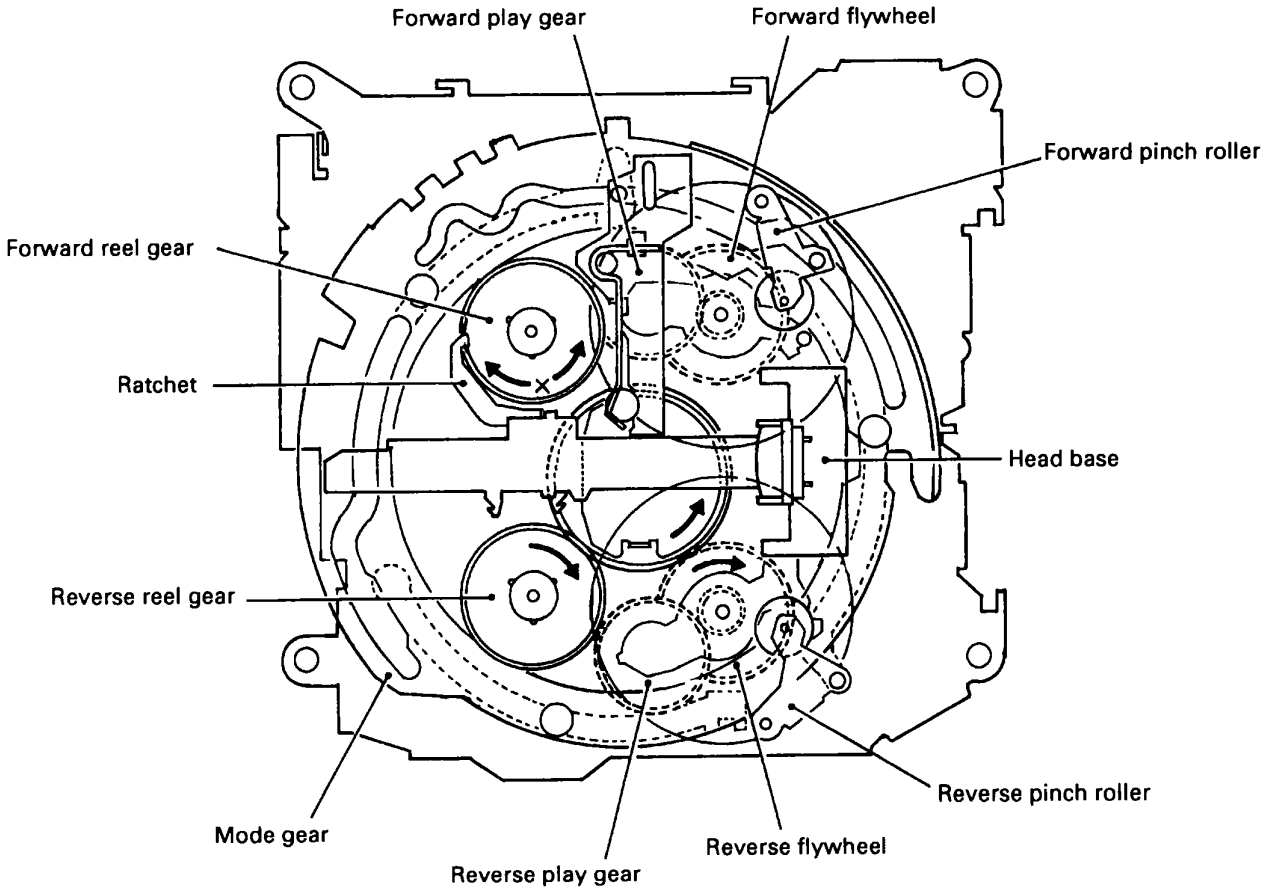


Fig.5

● **Forward Play**

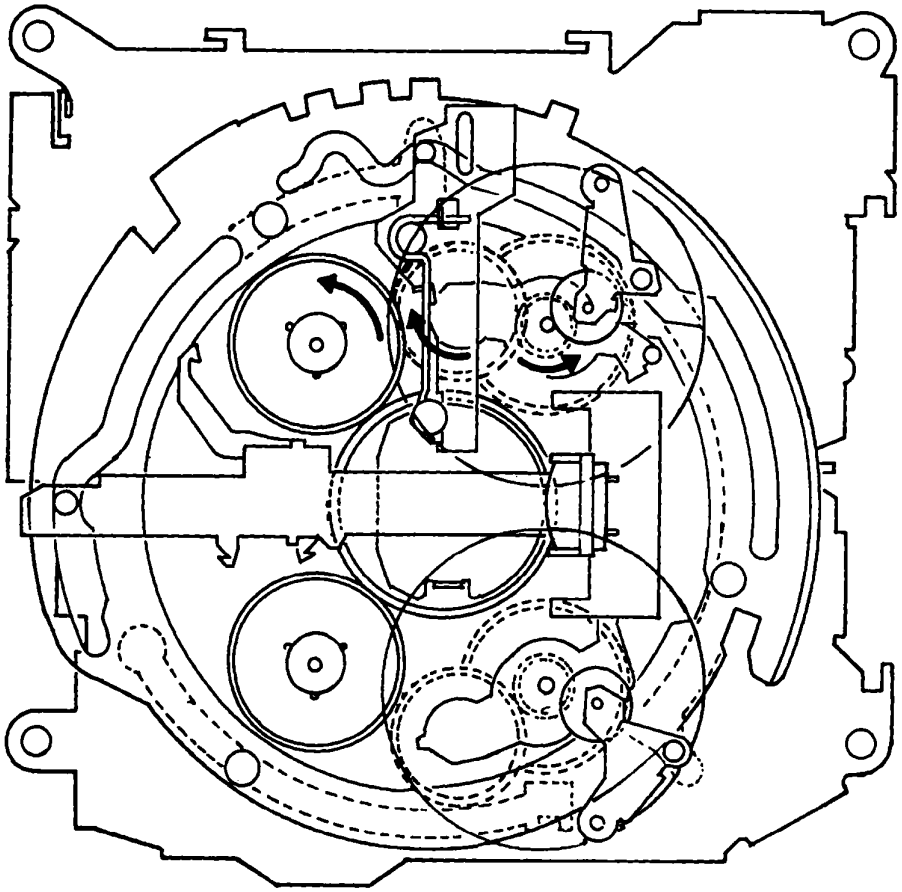


Fig.6

● REW

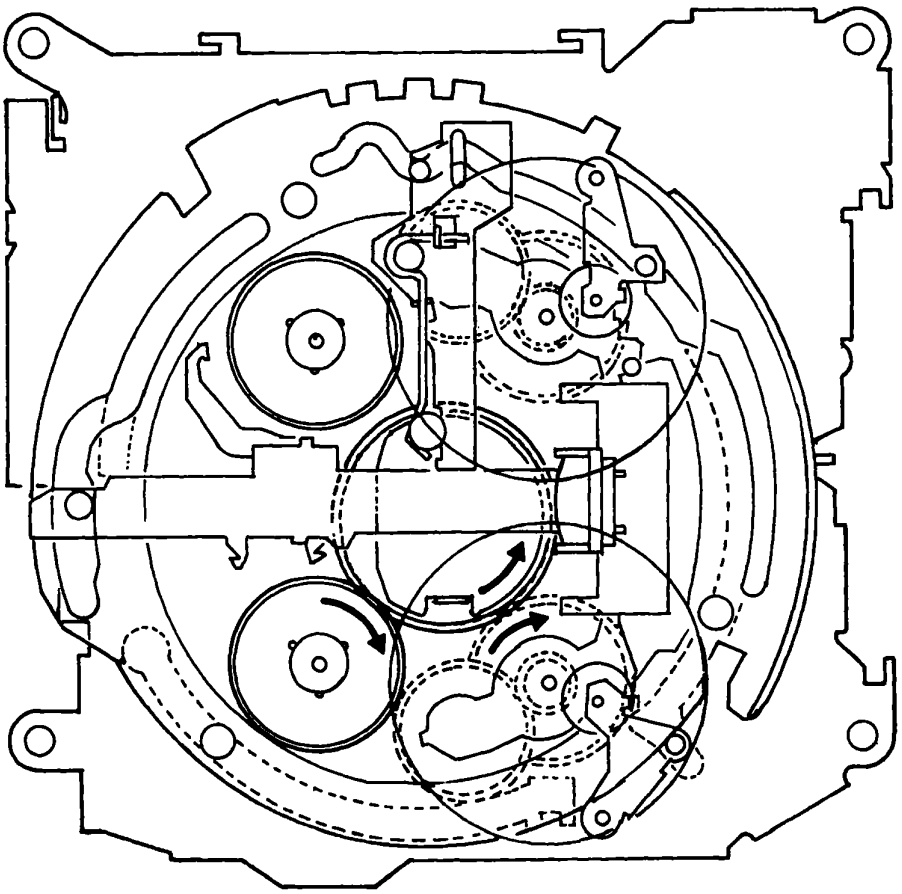


Fig.7

● FF

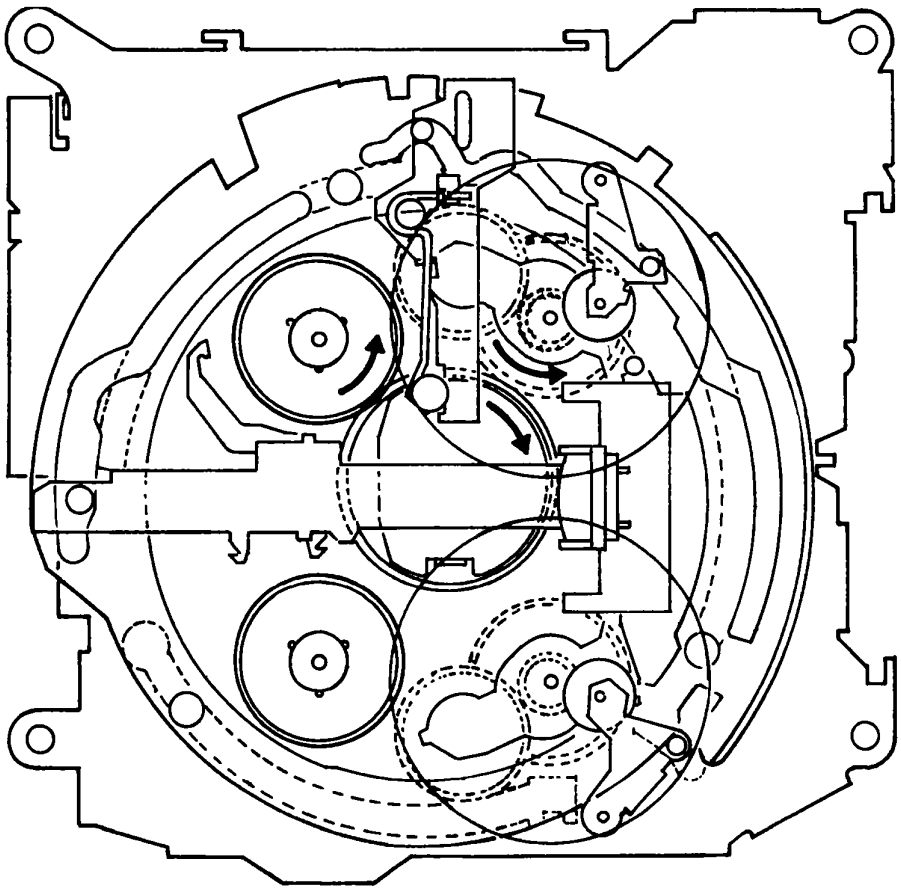


Fig.8

● **Reverse Play**

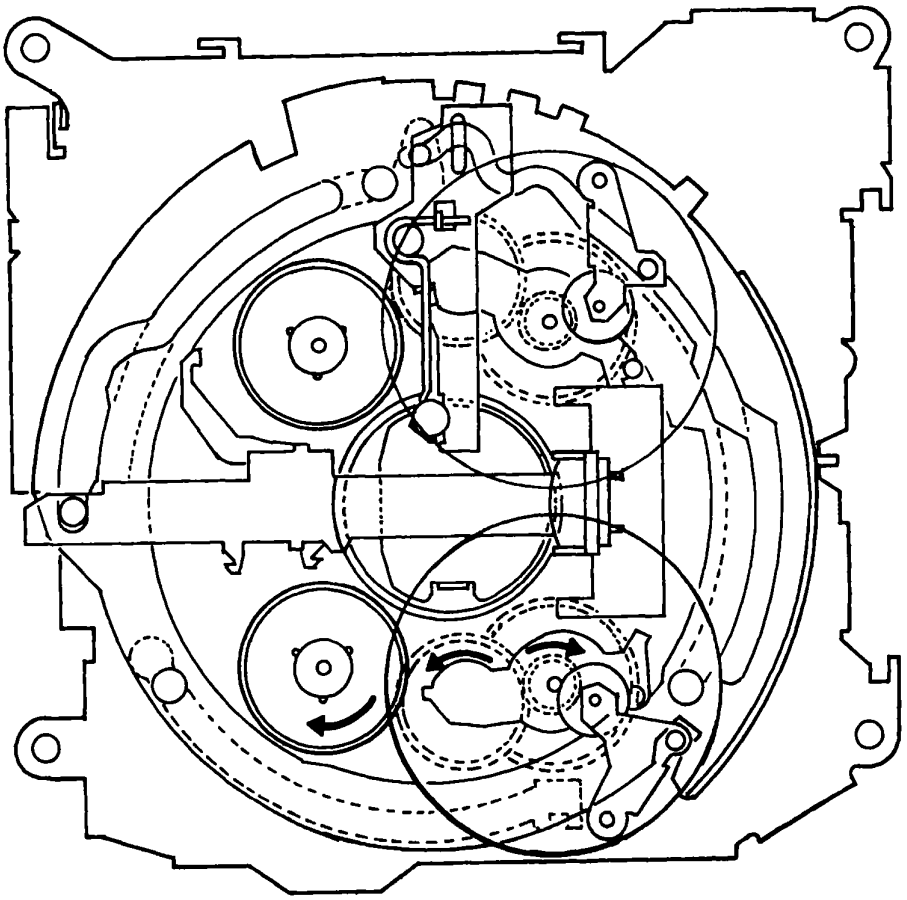


Fig.9

2. DISASSEMBLY

● How to Remove the Cassette Holder

1.Remove the washer and two arms.
2.Remove the two screws, and then remove the guide assy.
3.Straighten the frame unit pawl, and remove both holder and frame unit.

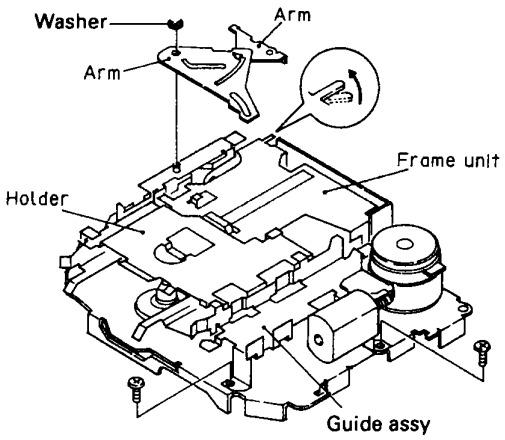


Fig.10

● How to Remove the Reel Unit

1.Remove the washer.
2.Push the arm in the arrow-marked direction and remove the reel assembly.

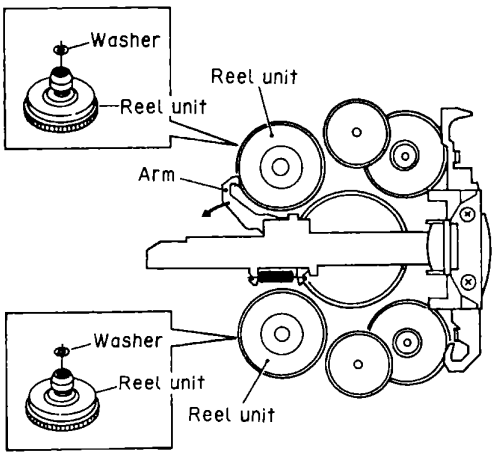


Fig.11

3. ADJUSTMENT

3.1 TAPE SPEED ADJUSTMENT

● To Adjust

Reproduce NCT-111 (3kHz, -10dB). Adjust the semi-fixed resistor so that frequency counter shows 3015Hz(+75Hz, –45Hz).

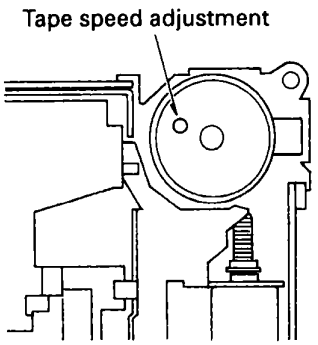


Fig.12

3.2 CHECK POINTS OF CASSETTE MECHANISM

Confirm the following items when replacing parts of the cassette mechanism .	■ Tape speed deviation: 3,000Hz +90Hz, –30Hz (4.76cm/s +3%, –1%) Using an NCT-111, measure the speed at the start and end of winding and take the maximum values.If values indicated by the pointer vary considerably, adjust to 70% of the minimum and maximum values. Measuring time shall be 5–6 seconds.	■ Wow and flutter: Less than 0.15%(WRMS) Using the NCT-111, measure the wow and flutter at the start and end of winding and take the maximum value. If values indicated by the pointer very considerably, adjust to 70 % of the minimum and maximum values. Measuring time shall be 5–6 seconds.
■ Fast forward and rewinding time: 100–120 seconds Using a C-60, set to fast forward and rewind, and measure the time with a stop watch.	■ Winding torque: 45–70 g·cm Using a cassette type torque meter (100 g·cm), measure the minimum value while in the play mode. Measuring time shall be 2.5–6 seconds.	■ F.F. torque: More than 50 g·cm Using a cassette type torque meter (130 g·cm), measure the value when the tape stops in the F.F. mode.
■ REW torque: More than 50 g·cm Using a cassette type torque meter (130 g·cm), measure the value when the tape stops in the REW mode.	■ Back tension torque: 1.5–5.5 g·cm After setting the REW mode without loading a cassette tape for 5 minutes, measure the back tension torque in the play mode, using a cassette type torque meter.	